Evaluation of Existing Services

This document presents initial findings of KKO's review of existing services. This evaluation was conducted primarily using the ridership and survey data collected as part of this study.

OVERALL FINDINGS

As service levels were being reduced in the 1980s and 1990s to respond to budget constraints, routes were modified to maintain service coverage. Many line-haul routes were combined into long loop routes. A significant number of route deviations were also added to many routes. These service modifications were successful in maintaining a basic level of service for the area's neediest residents. However, they also made MTA service very circuitous, complex, and inconvenient. As a result, many riders with other options left the system.

For the future, to regain lost ridership, MTA needs to focus on changes that will make service more convenient. In general terms, these changes should include:

1. **Make service more direct.** Most existing service is very circuitous. Many routes are long loops, which require most riders to take longer trips than would otherwise be necessary and increases travel times. Most line-haul routes are also circuitous.

2. **Make service simpler.** Service patterns on many routes vary by time of day, direction, and/or trip. This makes service confusing, as it can be difficult to remember how different trips serve different locations. To the greatest extent possible, trips should operate consistently along the same alignment in both directions.

3. **Minimize the number of route deviations that are operated**. A number of locations are served that require routes to deviate from their main alignment. Some of these locations are served only in one direction. These one-way route deviations make service very inconvenient, as riders must ride to the end of the line and then back in or out again on at least one leg of the trip. Where route deviations are warranted, they should be served in both directions.

4. **Develop a downtown Manchester Hub.** Currently, routes depart from one downtown location, and return to another. The use of two downtown terminals (Veterans Park and Elm and Wall Streets) makes service confusing and makes transfers between many routes difficult. The development of a single hub can significantly improve transfers (and will also simplify scheduling).

5. **Adjust spans of service to better match current market conditions.** Currently, service ends between 6:00 and 7:00 PM on all routes, which appears to be too early for many

routes. A significant part of Manchester's economy is in the retail sector, and MTA's most heavily utilized routes are to and from malls and shopping centers. Significantly heavier ridership in the outbound direction than inbound on these routes indicates that many riders use the bus outbound but then return home by another means after service has ended. In some cases, it also appears that service could start later.

6. **Convert some routes to flex-service.** Some existing loop routes attract very little ridership, and it may not be possible to provide effective fixed-route service. In some areas, flex-service could provide more attractive and more productive service.

Simplified Service

For a number of reasons, a simple route structure and schedules will attract more riders than a complex system. First and foremost, for people to use transit, they must be able to understand it, and simpler services are easier for riders to understand. Simpler systems also help ensure that they get where they want to go when they want to without experiencing frustration and problems. In total, transit systems with simpler route structures can more quickly attract new riders, and are also better able to attract casual riders. In contrast, as stated in TCRP's "Traveler Response to Transportation System Changes" report,[1] those with more complex route structures "put off riders with only a moderate inclination to try transit."

The most important service design characteristics of easy to understand systems include:

- Relatively direct routes that are associated with major arterials.
- Minimizing the number of route variations and route deviations.
- The use of clockface headways (for example, at 15 and 45 minutes past the hour).

Experience from other areas indicates that system simplification will improve user perceptions of service and increase ridership. In Riverside, California, route and schedule simplification increased ridership by 20%.[2] In Orange County, California, changes to provide more direct service on major arterials, making schedules more consistent produced ridership increases similar to Riverside's. King County Metro in Washington also successfully increased ridership by simplifying service.

Flex-Route Service

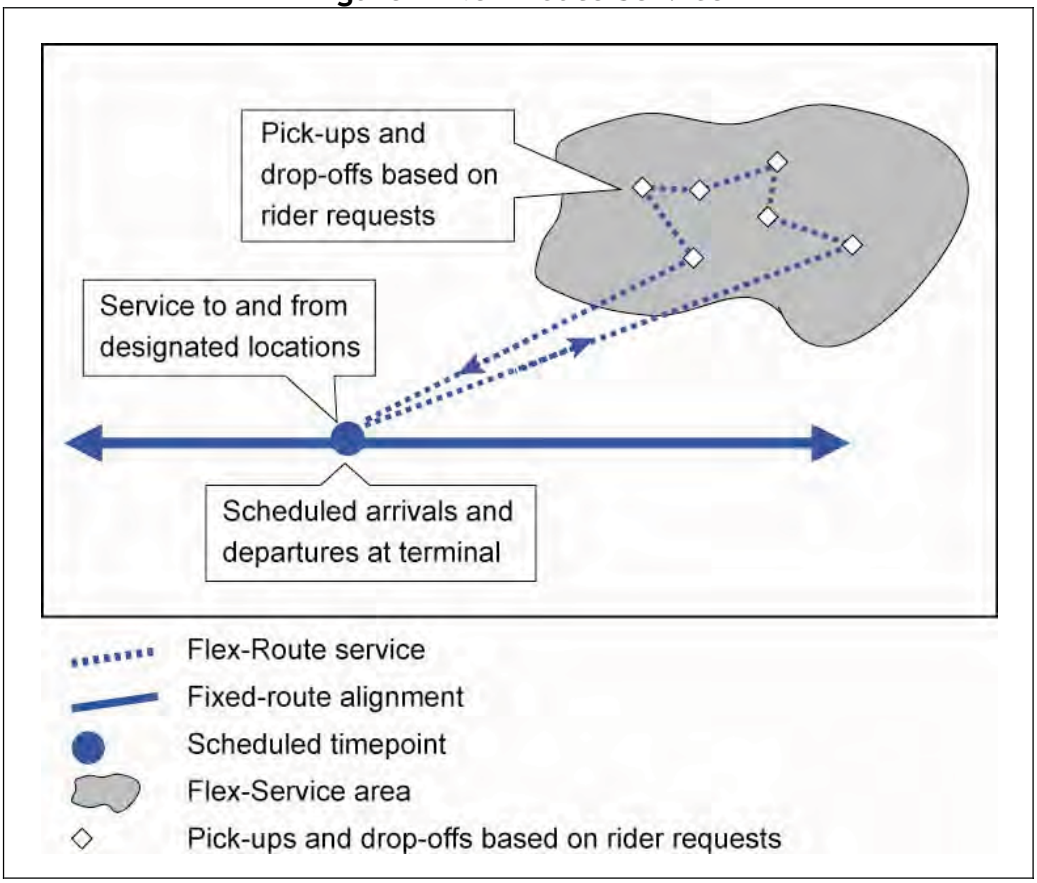
Existing MTA routes are traditional services that operate along a fixed route at set times and headways and with designated stops. Some MTA routes also have request stops, where buses will deviate upon request to serve additional locations that are near the route. These routes work well in more densely developed areas, but provide less comprehensive service in smaller areas.

[1] Transit Cooperative Research Program, Transportation Research Board, Report 95, Chapter 11, 2003.

[2] All of the examples presented in this section are from TCRP Report 95.

One option for providing more comprehensive service in lower density service areas would be to provide Flex-Route service, which is a hybrid of traditional fixed-route service and demand responsive service. At one end, Flex-Route service operates on a fixed schedule to and from specific locations. At the other end, it operates within a designated Flex-Route service area along a variable route providing demand-responsive service (see Figure 1). Flex-Routes are a way to provide service to areas where current population and employment densities or the road network make traditional fixed route service infeasible.

Figure 1 Flex-Route Service



Traditional features of Flex-Route service include one or more designated stops with scheduled arrivals and departures. Flex-Route services would operate to and from downtown Manchester or a transfer point such as the Mall of New Hampshire where timed-transfers would be available with other MTA services. Flexible features include curb-to-curb service within the Flex Service area.

Flex-Routes serve a number of different types of trips, some of which would require reservations:

- For trips from scheduled departure points to the "Flex-Service" areas, riders do not need reservations. Riders board the Flex-Route in the same manner as a regular route, and

upon boarding, tell the driver where they want to go. They are then dropped off at the curb in front of their destination.

- For trips from Flex-Service areas to terminal points, riders would need to make reservations to be picked up directly at the curb in front of their origin. They would call the transit office and schedule the trip based on their desired arrival time.
- For trips entirely within Flex-Service areas, riders make reservations for curb-to-curb service.

ROUTE EVALUATIONS

The performance of MTA's routes varies significantly from route-to-route (see Table 1 on the next page). Coincidentally, the routes with lower numbers generally have lower levels of performance than those with higher numbers. The best performing routes in the system are Routes 8 South Willow Street, 10 Valley Street Weston Street, and 13 Bedford Mall. The lowest performing routes are Routes 1 Airport, 3 Goffs Falls/Airport, and 5 Pinard/Bremer Street.

The following sections describe these existing MTA services on a route-by-route basis, and presents ridership on each route, productivity levels, an overall assessment of the route, and a general discussion of potential improvements. These potential improvements will be developed in more detail in the next phase of the study.

Route 1 Airport

Route 1 Airport is a peak period only service that provides four round trips per weekday (two in each peak period) between downtown Manchester and Manchester Airport (see Table 2). Service operates via South Willow Street and Perimeter Road around the airport (see Figure 2). Service is oriented to serving work trips at the airport and at businesses around the airport. Two variations are operated: one that operates clockwise around the airport, and a second that operates counter-clockwise. One of each variation is provided in each peak period.

Table 2: Route 1 Service Statistics

	Weekdays	Saturdays
Span of Service	6:30am – 7:55am 3:10pm – 4:25pm	No Service
Round Trips	4	0
Headways (mins)	30	

Ridership

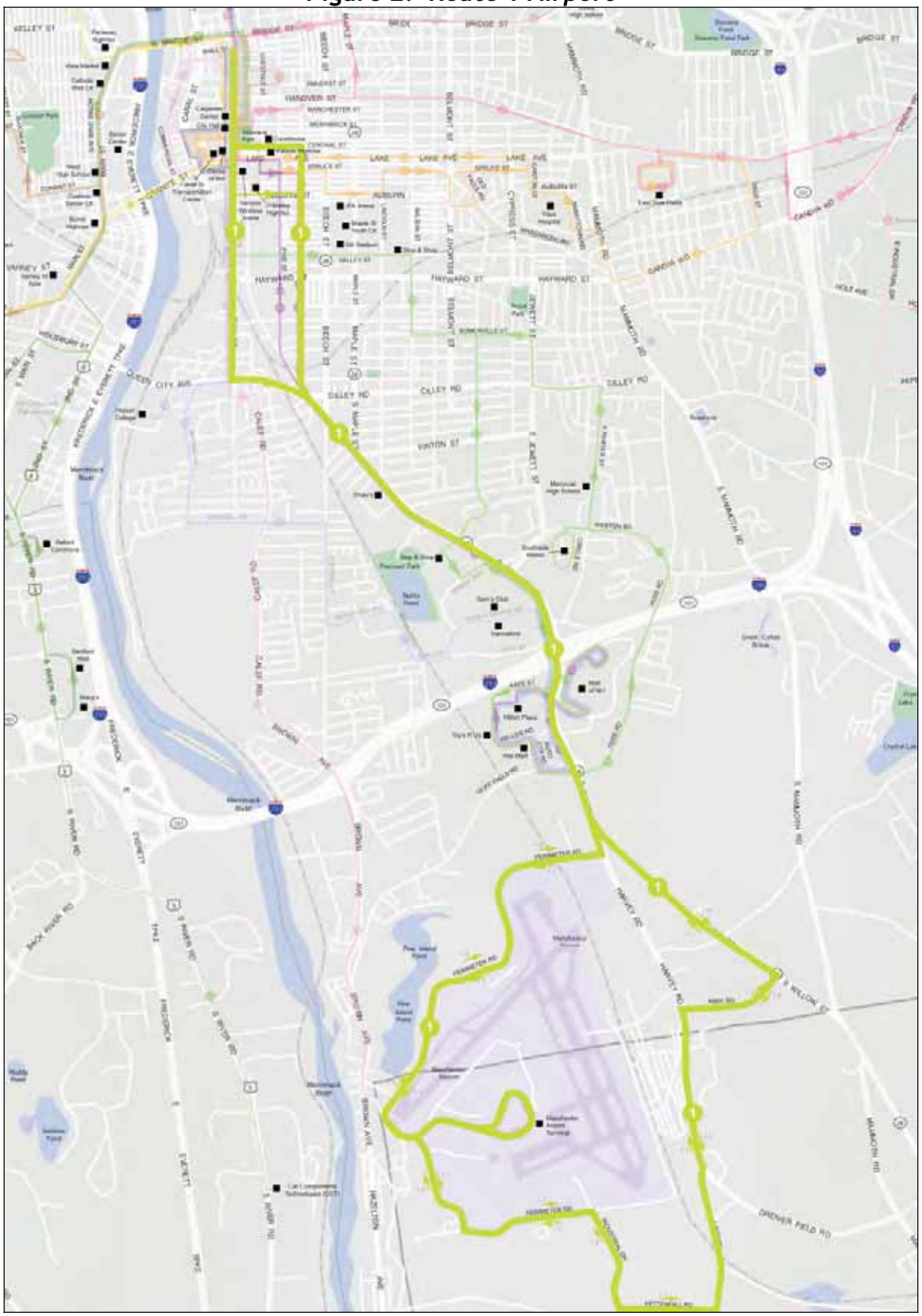
Route 1 carries only 33 passengers per weekday, making it the lowest ridership route in the MTA system. Most of the AM ridership (13 of 20 trips) is on the first outbound trip, while most of the PM ridership is split between the two inbound trips. All trips are between downtown and the airport or the industrial area around the airport. No trips are made to or from intermediate points.

Table 1: Service Statistics and Performance

	Average Ridership	Round Trips	Vehicle Service Hours	Vehicle Service Miles	Pax/ Round Trip	Pax/VSH	Pax/VSM
Weekdays							
1 Airport	33	4.0	4.4	87.4	8.3	7.5	0.4
2 Lake Ave/Hanover St	173	13.0	10.8	133.9	13.3	16.1	1.3
3 Goffs Falls/Airport	73	13.0	10.8	155.2	5.6	6.7	0.5
4 Page St/Elliot Hospital	118	12.0	9.0	100.8	9.8	13.1	1.2
5 Pinard/Bremer St	49	12.0	9.0	93.6	4.1	5.4	0.5
6 Gossler/St. Anselm	114	14.0	10.6	131.6	8.1	10.8	0.9
7 Veterans Hospital	155	13.0	9.6	113.1	11.9	16.2	1.4
8 South Willow St	218	13.0	12.1	168.4	16.8	18.0	1.3
9 DW Highway/River Rd	163	12.0	9.6	123.5	13.6	17.0	1.3
10 Valley St/Weston St	240	12.0	9.8	117.6	20.0	24.6	2.0
11 Front SWt/Hacckett Hill	116	12.0	11.8	150.0	9.7	9.9	0.8
12 S Beech St/Mall of NH	203	12.5	8.9	138.0	16.2	22.8	1.5
13 Bedford Mall/CCT	250	13.0	13.4	145.4	19.2	18.6	1.7
13 w/o CCT Trips	234	11.0	11.0	115.0	21.3	21.3	2.0
System Total/Average	1905	166.5	129.6	1,658.5	11.4	14.7	1.1
Saturdays							
1 Airport							
2 Lake Ave/Hanover St							
3 Goffs Falls/Airport	22	9.0	7.5	107.1	2.4	2.9	0.2
4 Page St/Elliot Hospital	58	9.0	8.9	117.0	6.4	6.5	0.5
5 Pinard/Bremer St							
6 Gossler/St. Anselm	47	10.0	8.0	75.2	4.7	5.9	0.6
7 Veterans Hospital	61	9.0	6.7	78.3	6.8	9.2	0.8
8 South Willow St	135	8.0	9.8	134.0	16.9	13.8	1.0
9 DW Highway/River Rd	64	10.0	6.7	85.5	6.4	9.6	0.7
10 Valley St/Weston St	209	8.0	6.8	88.2	26.1	31.0	2.4
11 Front SWt/Hacckett Hill	34	10.0	11.5	125.0	3.4	3.0	0.3
12 S Beech St/Mall of NH	151	9.0	5.6	92.0	16.7	27.0	1.6
13 Bedford Mall/CCT	221	9.0	9.0	93.6	24.6	24.6	2.4
System Total/Average	1002	91.0	80.3	995.9	11.0	12.5	1.0

Green = *Above average/median;* ***Red*** = *below average/median*

Figure 2: Route 1 Airport



Productivity

Low ridership is partly attributable to the part-time nature of the route; however, productivity is also very low. Ridership per trip is fourth lowest in the system, ridership per vehicle service hour (VSH) third lowest, and ridership per passenger mile the lowest (see Table 3).

Table 3: Route 1 Performance Measures

	System Avg	Route 1	Rt 1 Rank
Average Daily Ridership	147	**33**	**13 of 13**
Pax/Round Trip	12.2	**8.3**	**10 of 19**
Pax/VSH	14.7	**7.5**	**11 of 19**
Pax/VSM	1.1	**0.4**	**13 of 19**

Green = Above average/median; Red = below average/median

Overall Assessment, and Potential Changes

Route 1's very low productivity indicates that the route, as currently configured, is not effective. Low ridership is likely due to a number of factors:

- The limited service nature of the route likely makes service very inconvenient for may potential riders.
- Existing schedules may not match work schedules at airport-related businesses.
- The operation of service in different directions around the airport makes the service difficult to understand and does not provide clear benefits.
- Between downtown and the Mall of New Hampshire, much of Route 1's service duplicates that provided by Route 8 South Willow Street. This likely accounts for the very low intermediate ridership on the route.

At the same time, existing ridership between downtown and the airport industrial area indicates that there is some demand for service to that area. As described above, the limited service nature of the route makes it difficult to determine whether low ridership is a function of low demand or the way service is provided. The current alignment and schedules are not effective, and changes are warranted. Potential changes that could attract more riders and increase service productivity could include:

- Operate all service along the same alignment.
- Provide connecting fixed-route or flex-route service from the Mall of New Hampshire.
- Provide flex-route service between downtown and the airport industrial area.
- Operate service to the airport industrial area via an extension of Route 3 Goffs Falls/Airport.

Route 2 Lake Avenue/Hanover Street

Route 2 operates between downtown Manchester and the Massabesic Circle at the intersection of Candia Road and the Londonderry Turnpike (see Figure 3). Outbound service begins at Veterans Park and travels outbound via Hanover Street; inbound service ends at Elm & Wall Streets and deviates from Hanover Street to Bridge Street to get there. Service operates only on weekdays.

Two variations are operated: a "direct" version that operates via Hanover Street and Candia Road, and an "industrial park" loop that operates outbound via the industrial park on East Industrial Drive. Inbound riders from the industrial park must travel outbound to the end of the line at Massabesic Circle, and then continue on the inbound trip. The first three trips of the day and two PM peak trips operate via the industrial park; all others operate direct.

Service operates every 60 minutes on clock-face headways throughout the day. Service starts at 5:35 am, which is among the earliest starts of any route. The last outbound trip leaves downtown at 5:35 pm, and all service on the route ends at 6:25 with the arrival of the last inbound trip.

Table 4: Route 2 Service Statistics

	Weekdays	Saturdays
Span of Service	5:35am – 6:25am	No Service
Round Trips	13	
Headways (mins)	60	

Ridership

Route 2 carries 153 passengers per day, making it MTA's fifth highest ridership route. Ridership is heavily oriented toward work trips and shopping trips (53% and 35%, respectively. With the heavy orientation toward work trips, ridership is heaviest during the AM peak, and the late afternoon and PM peak, when ridership is as high as 29 passengers per trip (see Figure 4). The predominant flow is inbound in the morning and outbound in the afternoon, although there is

Figure 4: Route 2 Weekday Ridership by Trip

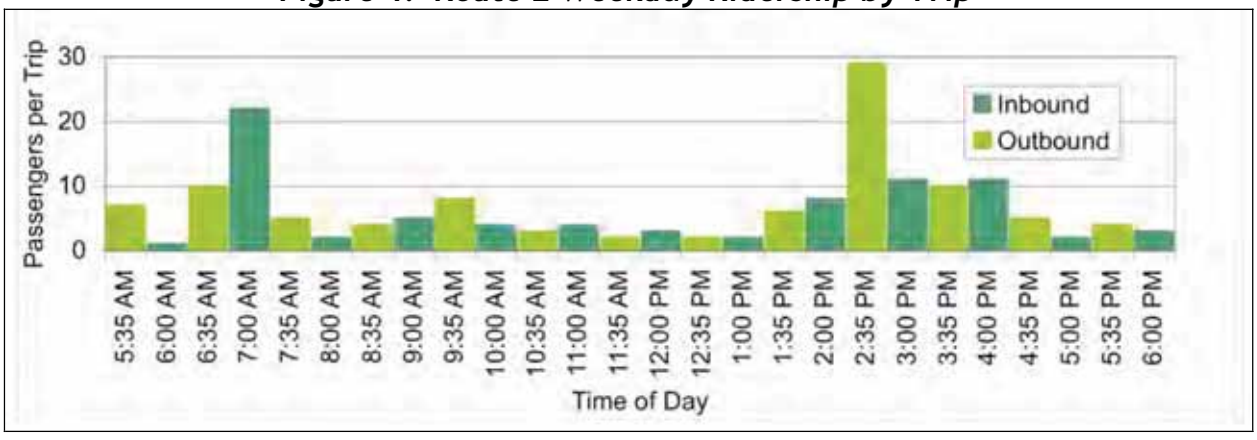
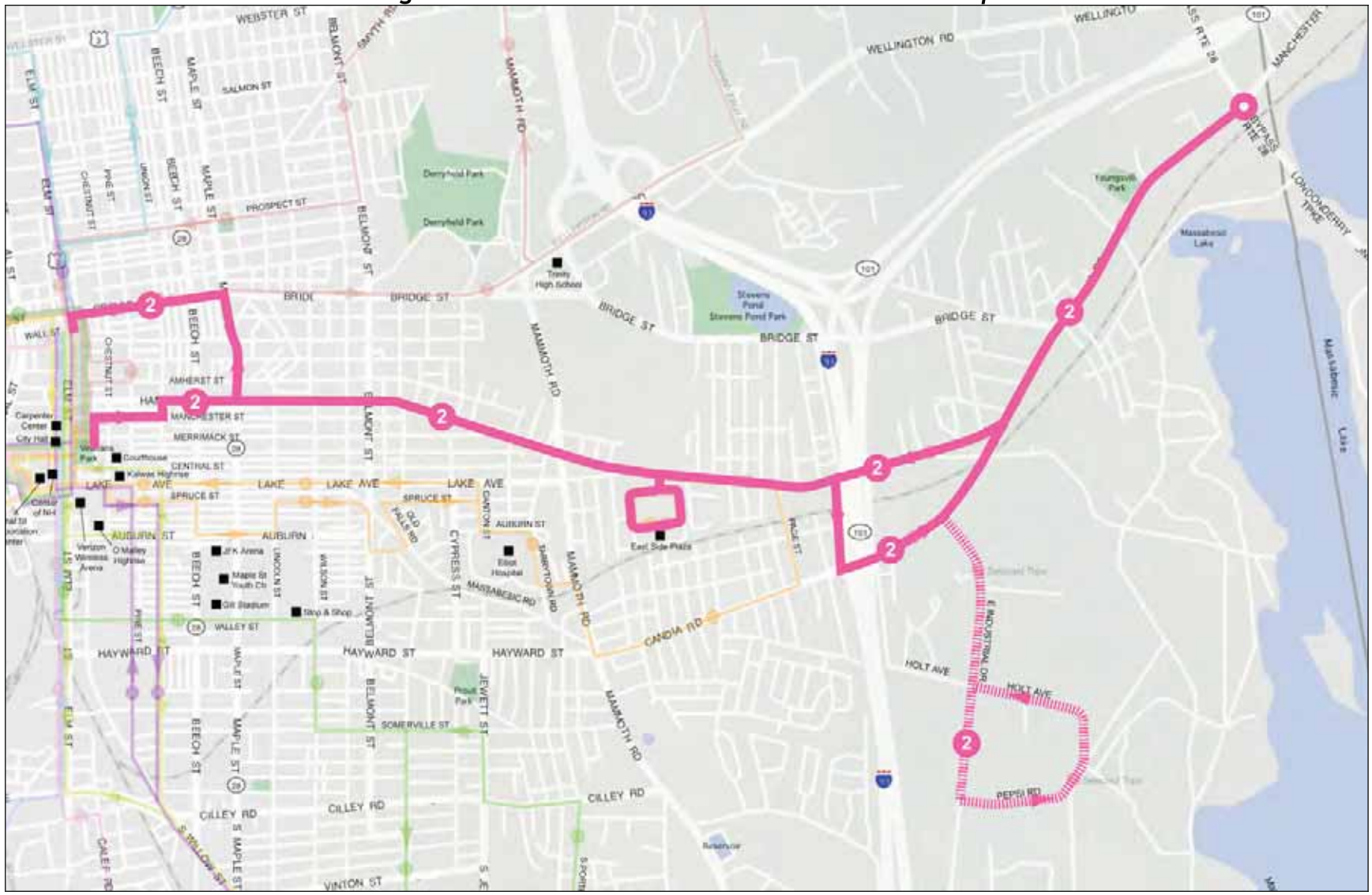


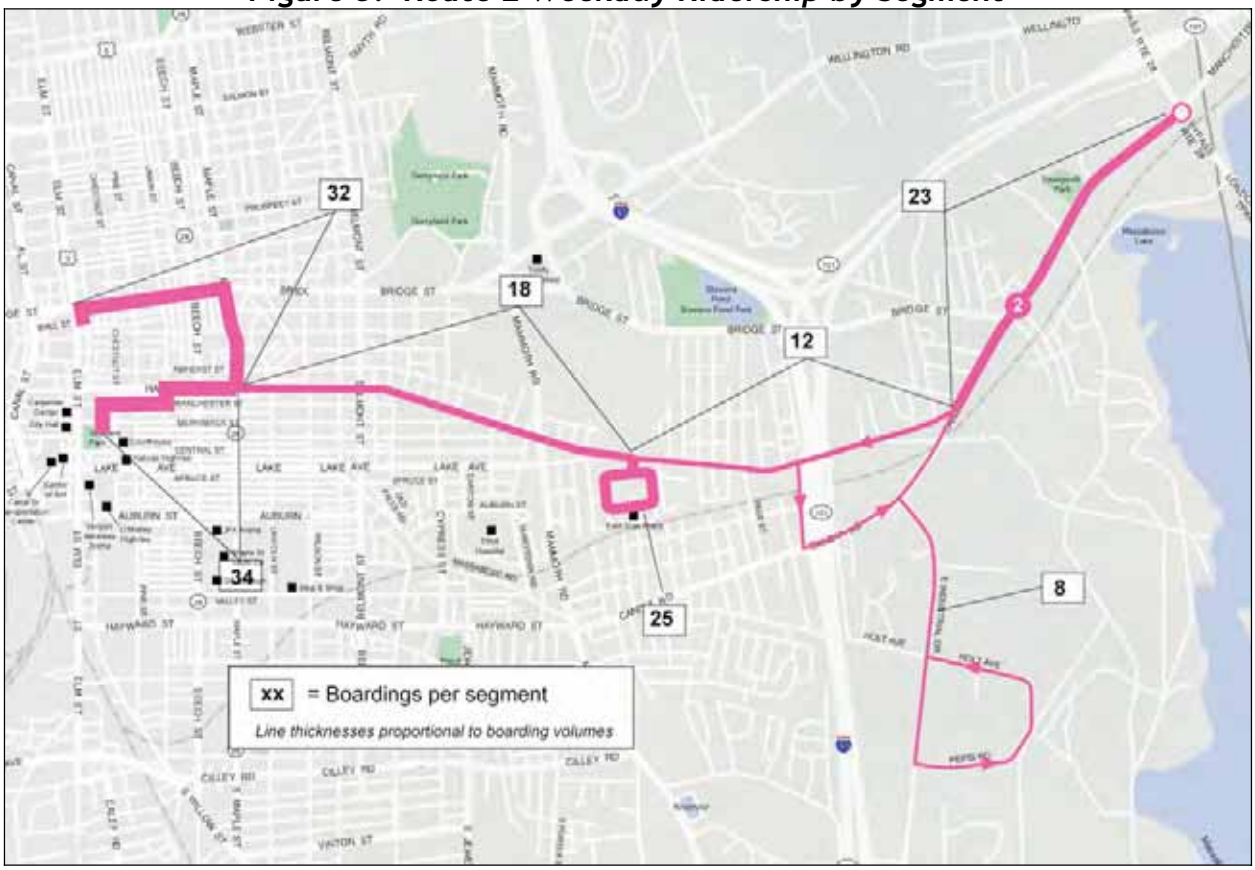
Figure 3: Route 2 Lake Avenue/Hanover Street Map



also a significant number of AM outbound and PM inbound trips. Ridership during the later morning, early afternoon, and near the end of service is very light; trips during these times generally less than five passengers per trip.

Along the route, ridership is heaviest between downtown and East Side Plaza, but is still fairly well distributed along the route (see Figure 5). The lowest ridership segment is the industrial park area, with only eight trips per weekday. Low ridership in this area is partially due to the lower level of service to that area. The outbound only service also likely acts as a deterrent to higher ridership.

Figure 5: Route 2 Weekday Ridership by Segment



Productivity

On a systemwide basis, Route 2's productivity is above average (see Table 5). Relative to other individual routes, Route 2's performance is near the middle.

Table 5: Route 2 Performance Measures

	System Avg	Route 2	Route 2 Rank
Average Daily Ridership	147	173	5 of 13
Pax/Round Trip	12.2	13.3	6 of 13
Pax/VSH	14.7	16.1	7 of 13
Pax/VSM	1.1	1.3	7 of 13

Green = Above average/median; Red = below average/median

Operating Issues

As described above, three AM peak and two PM peak trips operate via the industrial area along East Industrial Park Drive. Current schedules do not provide additional time for these deviations, and the inbound legs of all of these trips ran late during the October 2005 ridechecks. Although construction on Candia Road (which has since been completed) also contributed to delays, poor on-time performance on the trips with the industrial park deviation indicate that there is not sufficient time within Route 2's schedule for this deviation.

Overall Assessment and Potential Changes

Route 2 performs fairly well. However, service is circuitous, and the industrial park deviation causes delays. Outbound only service to the East Industrial Park Drive area also makes inbound trips from that area very inconvenient (requiring riders to travel outbound to the end of the line, and then back in.) Potential improvements to make service more attractive and more reliable include:

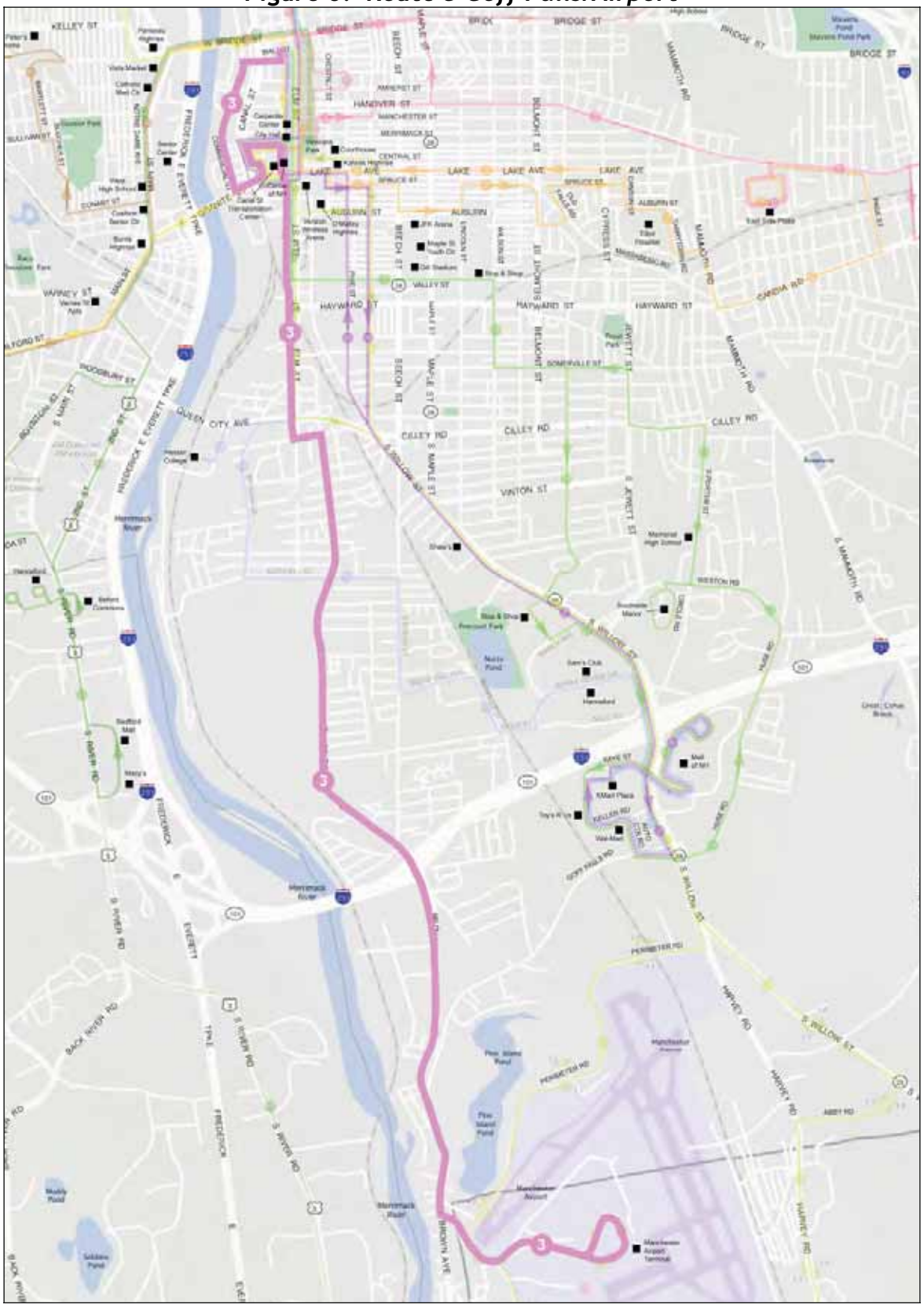
- Make service more direct by operating inbound and outbound service along the same alignment. Outside of downtown, this could be done by operating all service along Hanover Street and Candia Road.
- Eliminate the outbound deviation along Lovering Street and East Industrial Park Drive, and instead provide service to this area through an extension of a reconfigured Route 4 Page Street/Elliot Hospital (see Route 4 section).

Route 3 Goffs Falls/Airport

Route 3 Goffs Falls/Airport operates between downtown Manchester and Manchester Airport via Elm Street, Calef Road, and Brown Ave (see Figure 6). Outbound service departs from Elm and Wall Streets and operates via the Canal Street Transportation Center; inbound service operates directly back to Veterans Park, where it terminates. At the airport end, the route operates in and out of the airport via Airport Road and loops around the terminals. Service operates Monday through Saturday.

On weekdays, service operates every 60 minutes on clock-face headways throughout the day. Service is oriented toward work trips to and from the airport, with the first outbound trip at 6:05

Figure 6: Route 3 Goff Falls/Airport



am and the last inbound trip at 5:50 pm. On Saturdays, the first outbound trip leaves at 8:25 am and the last inbound trip leaves at 4:50 pm.

Table 6: Route 3 Service Statistics

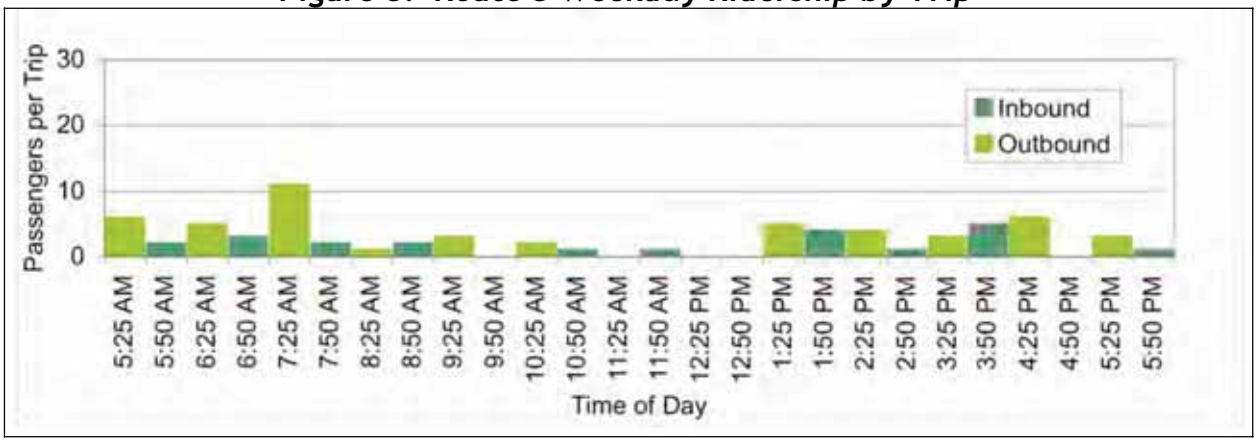
	Weekdays	Saturdays
Span of Service	5:25am – 6:10pm	8:25am – 5:10pm
Round Trips	12	9
Headways (mins)	60	60

Ridership

Ridership is 73 trips per weekday and 22 trips per Saturday. These figures place Route 3 as the third lowest ridership weekday route, and the lowest ridership Saturday route. As with Route 1, most ridership is between downtown and the Airport. There is some limited intermediate ridership on Brown Avenue, but very little ridership along Calef Road (see Figure 7 on the next page).

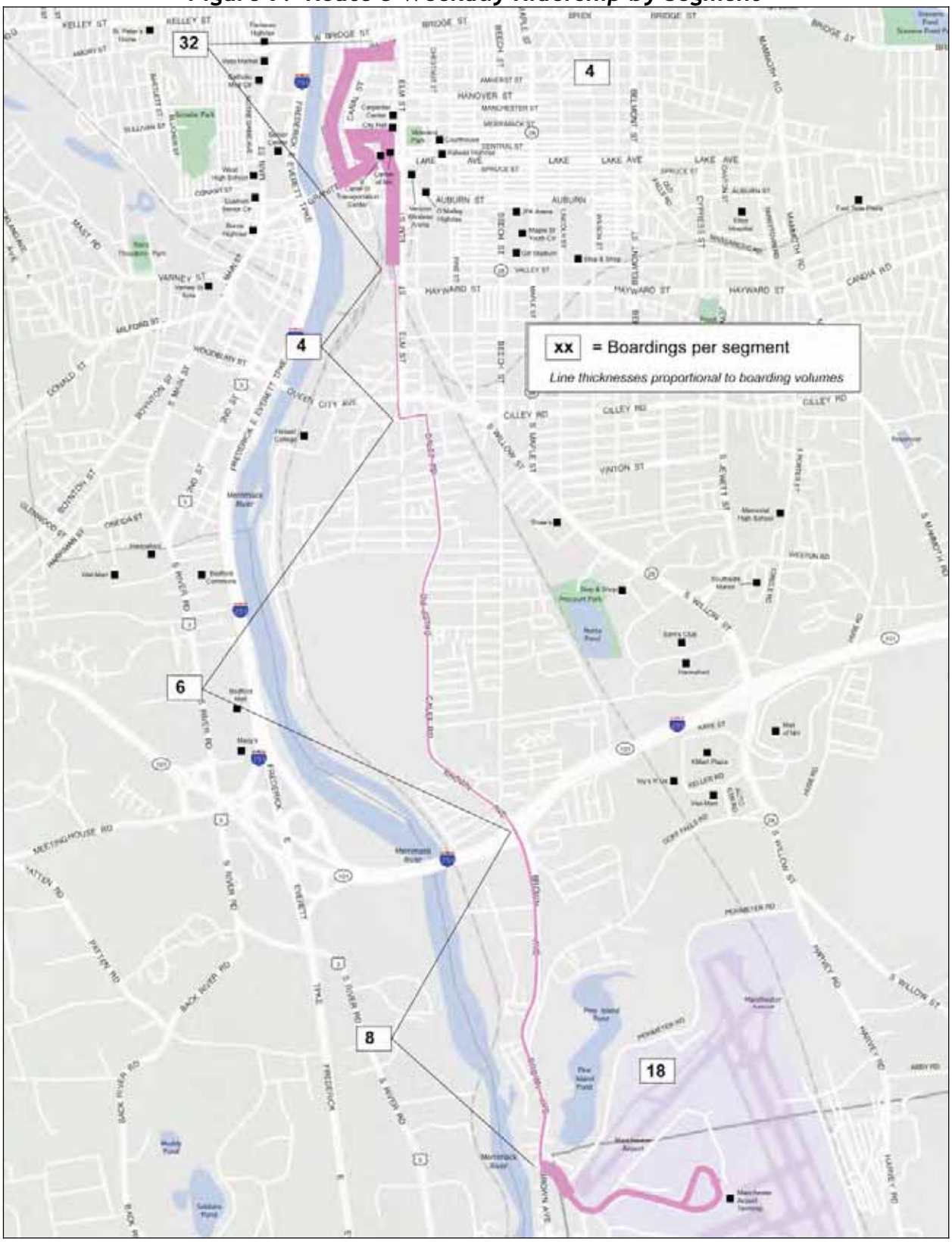
Ridership is very low on most trips (see Figure 8). On weekdays, the highest ridership recorded on any trip was 11 passengers. Most trips carried 3 or fewer trips, and many trips run empty. On Saturdays, most trips carry three or fewer passengers.

Figure 8: Route 3 Weekday Ridership by Trip



On weekdays, low ridership may indicate that Route 3 schedules do not sufficiently match airport employees shift times. Airport operations commence before the arrival of the first bus at 5:50 am, meaning that many employees are already at work by the time that service begins. On Saturdays, the same is likely true, but to an even greater extent. The Saturday span of service (8.5 hours) is also too short for many work shifts.

Figure 7: Route 3 Weekday Ridership by Segment



Productivity

Route 3's low ridership levels result in very low levels of productivity—the second or third lowest in all categories on weekdays, and the worst in all categories on Saturdays (see Table 7). Route 3's performance is significantly below system averages in all respects.

Table 7: Route 3 Performance Measures

	System Avg	Route 3	Route 3 Rank
Weekdays			
Average Daily Ridership	147	**73**	**11 of 13**
Pax/Round Trip	12.2	**5.6**	**12 of 13**
Pax/VSH	14.7	**6.7**	**12 of 13**
Pax/VSM	1.1	**0.6**	**12 of 13**
Saturdays			
Average Daily Ridership	77	**22**	**10 of 10**
Pax/Round Trip	11.0	**2.4**	**10 of 10**
Pax/VSH	12.6	**2.9**	**10 of 10**
Pax/VSM	1.0	**0.2**	**10 of 10**

***Green** = Above average/median; **Red** = below average/median*

Overall Assessment and Potential Changes

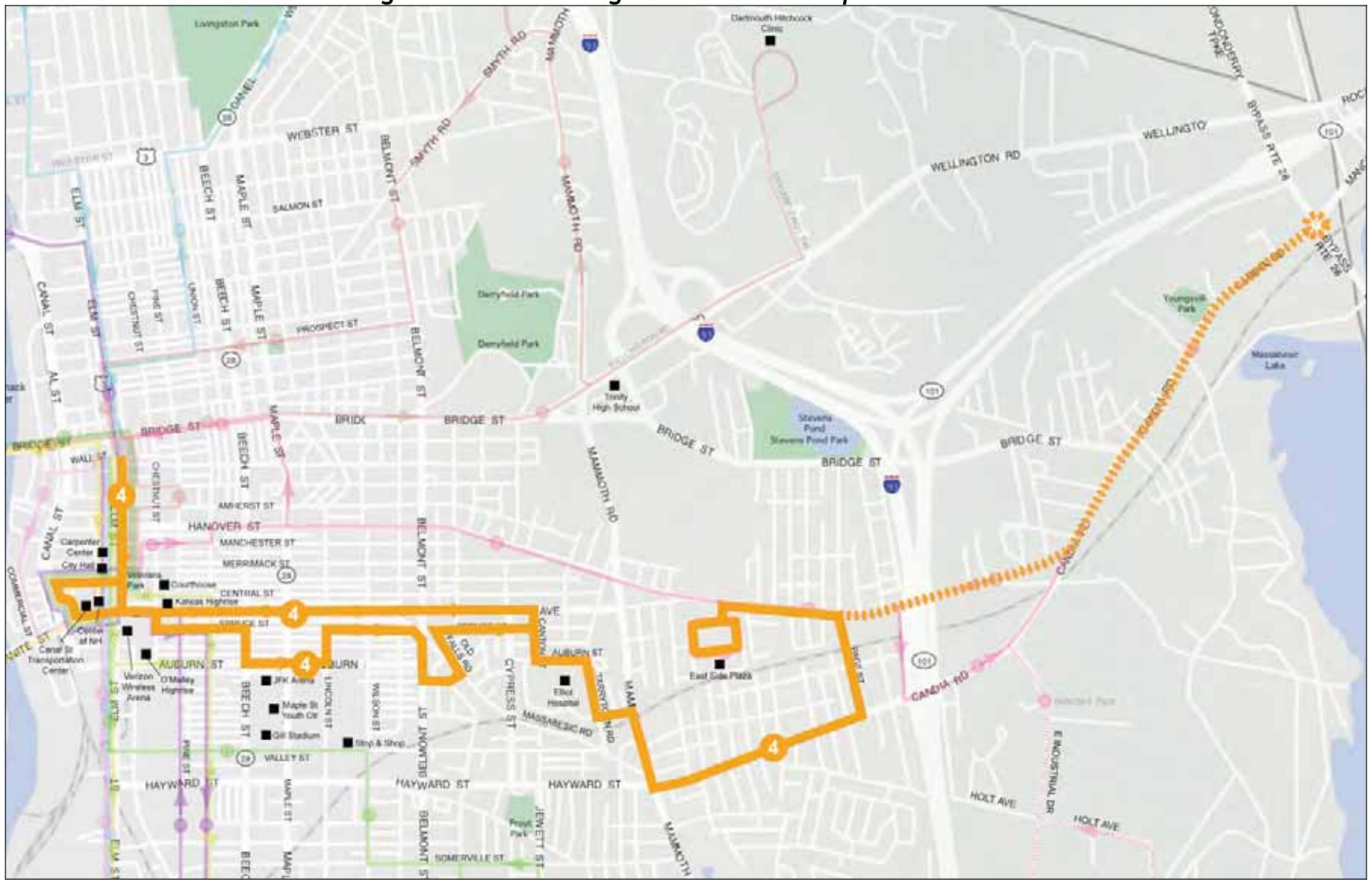
Route 3 performs below average in all respects, and is one of the worst performing routes in the MTA system. Poor performance on Route 3, coupled with poor performance on Route 1, which is the other route that serves the airport, indicates that different approaches to airport service should be considered. Options include:

- Reschedule service based on airport shift times (which may require a longer span of service).
- Re-route service via I-293 to reduce travel times.
- Provide timed transfers at the airport terminal to and from fixed-route or flex-route service serving businesses and hotels surrounding the airport.
- Replace Route 1 Airport and Route 3 Goffs Falls/Airport service with new connecting service (fixed-route or flex-route) from the Mall of New Hampshire.
- Discontinue Saturday service due to very low ridership.

Route 4 Page Street/Elliot Hospital/Hanover

On weekdays, Route 4 operates between downtown Manchester and the East Side Plaza (see Figure 9). Route 4's alignment is very circuitous, especially in the outbound direction. Outbound service starts at Elm and Wall Streets, and then operates along Spruce Street but with deviations to Auburn Street and Massabesic Street. The reasons for these diversions are not

Figure 9: Route 4 Page Street/Elliot Hospital/Hanover



clear. Outbound from Canton Street, service operates via Elliot Hospital, Candia Road, Page Street, and Hanover Street to East Side Plaza. Inbound service follows the reverse of the outbound alignment as far as Canton Street, and then operates to downtown directly along Lake Street to Granite Street to the Canal Street terminal. From there it loops around Canal and Pleasant Street to Elm Street to the end of the line at Veterans Park.

On Saturdays, service operates along the same alignment, but is also extended from East Side Plaza to Massabesic Circle along Hanover Street and Candia Road. This area is served on weekdays by Route 2 Lake Avenue/Hanover Street, but that route does not operate on Saturdays. The Route 4 extension is designed to provide Saturday service to that area.

Weekday service operates between 6:05 am and 5:50 pm at 60 minute clock-face headways throughout the day. Saturday service operates from 8:00 am to 4:45 pm, also at 60 minute clock-face headways throughout the day.

Table 8: Route 4 Service Statistics

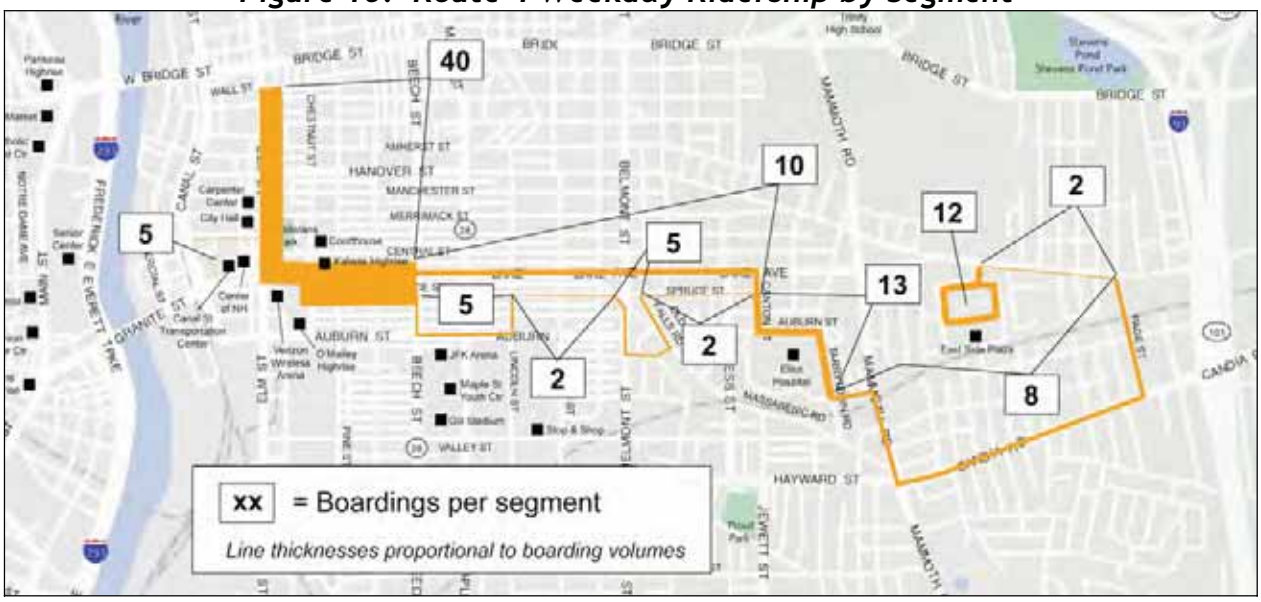
	Weekdays	Saturdays
Span of Service	6:05am – 5:50pm	8:00am – 4:45pm
Round Trips	12	9
Headways (mins)	60	60

Ridership

Ridership is 118 trips per weekday and 54 trips per Saturday. Compared to other routes, these ridership levels place Route 4 near the middle for both weekdays and Saturdays.

Major stops are those in downtown, Elliot Hospital, and East Side Plaza. Other ridership is well distributed along the route (see Figure 10). Ridership on the deviations, while not particularly

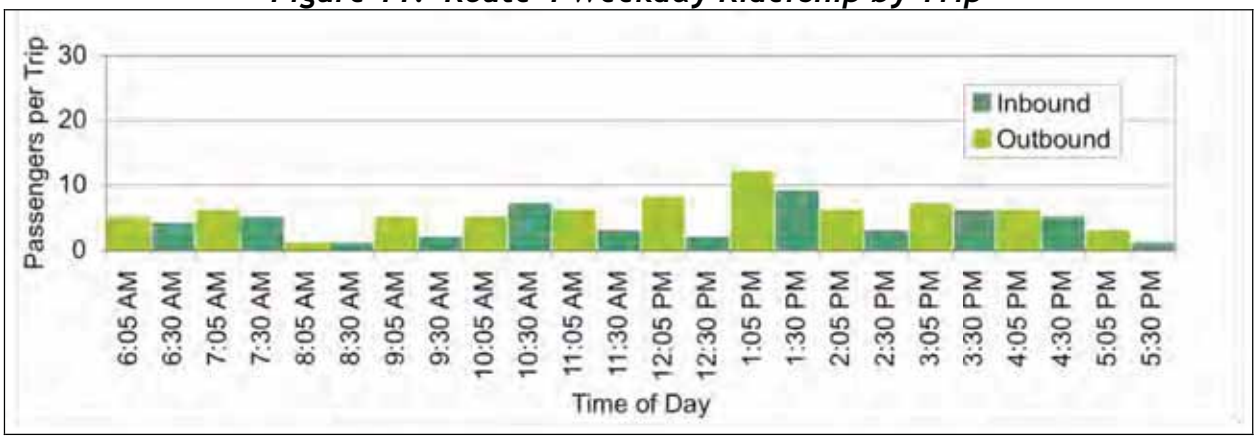
Figure 10: Route 4 Weekday Ridership by Segment



low compared to along other segments of the route, does not appear to be high enough to warrant the complexity and circuitousness that they introduce. This is especially true considering the relatively short distances that are involved.

Ridership on Route 4 is heavily oriented toward shopping trips (38%), work trips (29%), and medical trips (20%). Consistent with this mix of trip purposes, weekday ridership is heaviest in the afternoon (see Figure 11). Weekday ridership averages 5 passengers per trip, and is less than

Figure 11: Route 4 Weekday Ridership by Trip



10 passengers per trip on all trips except one. Saturday ridership averages only 3 passengers per trip.

Productivity

Route 4's performance is below average by most measures (see Table 9). The one exception is weekday passengers per vehicle service mile, which is slightly above average.

Table 9: Route 4 Performance Measures

	System Avg	Route 4	Route 4 Rank
Weekdays			
Average Daily Ridership	147	**118**	**8 of 13**
Pax/Round Trip	12.2	**9.8**	**8 of 13**
Pax/VSH	14.7	**13.1**	**8 of 13**
Pax/VSM	1.1	**1.2**	**8 of 13**
Saturdays			
Average Daily Ridership	77	**58**	**7 of 10**
Pax/ Round Trip	11.0	**6.4**	**6 of 10**
Pax/VSH	12.6	**6.5**	**7 of 10**
Pax/VSM	1.0	**0.5**	**8 of 10**

***Green** = Above average/median; **Red** = below average/median*

Overall Assessment and Potential Changes

Route 4, as it is currently configured, is very circuitous, especially in the outbound direction. Different inbound and outbound alignments are used along the downtown end of the route, largely because of the one-way pair configuration of many east-west roads. Overall, the circuitous alignment, and the different weekday and Saturday alignment, make the route inconvenient and complex. Potential improvements to simplify the route and make it more direct would include:

- Operate service along the same alignment in both directions by:
  - Eliminating the low ridership outbound deviations to Auburn Street and Massabesic Street.
  - Operating service to and from downtown along Central or Cedar Streets.
- Eliminate the deviation along Candia Road in order to route service more directly to East Side Plaza.

In addition, service could be extended from East Side Plaza to the East Industrial Park Drive area. As described above, this could replace Route 2 Lake Ave/Hanover Street service to that area, which would simplify Route 2. Extended Route 4 service would also operate all day, which would be a significant increase in service from the 5 trips that are provided on Route 2. Service would also be provided in both directions, which would eliminate the need for inbound riders to travel via Massabesic Circle.

Route 5 Pinard/Bremer Street

Route 5 Pinard/Bremer Street is a loop route that operates to and from downtown Manchester via St. Anselm College (see Figure 12). All service operates clockwise. Service starts at Elm and Wall Streets and ends at Veterans Park. Major stops include the Varney Street Apartments near Main Street, St. Anselm College, and the Kelly Street housing project. Route 5 service is very similar to, but not the same as, Route 6 Gossler/St. Anselm service that operates in a counter-clockwise route through the same area.

Service operates only on weekdays, every 60 minutes from 6:00 am to 5:40 pm. Service operates on clock-face headways throughout the day.

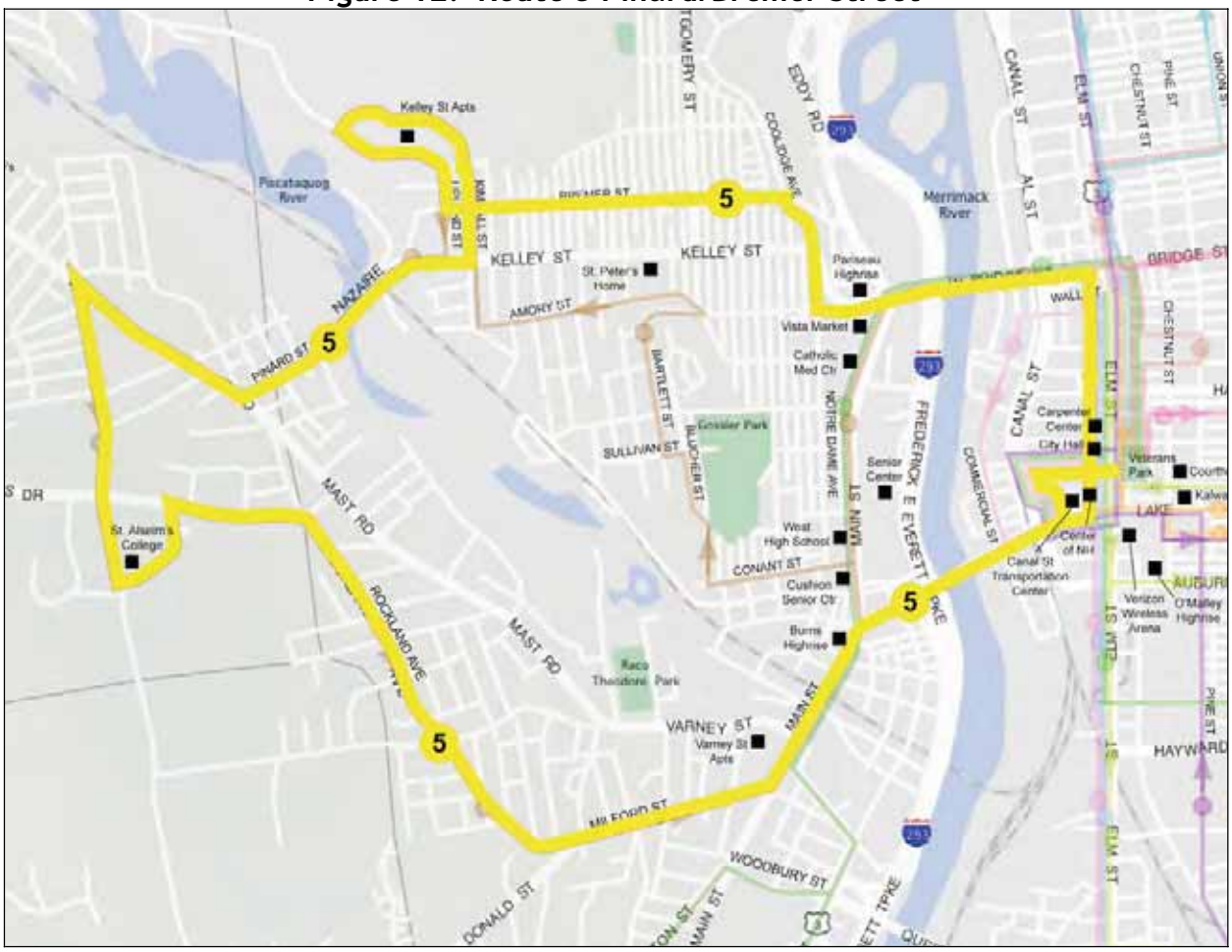
Table 10: Route 5 Service Statistics

	Weekdays	Saturdays
Span of Service	6:00am – 5:40pm	No service
Round Trips	12	
Headways (mins)	60	

Ridership

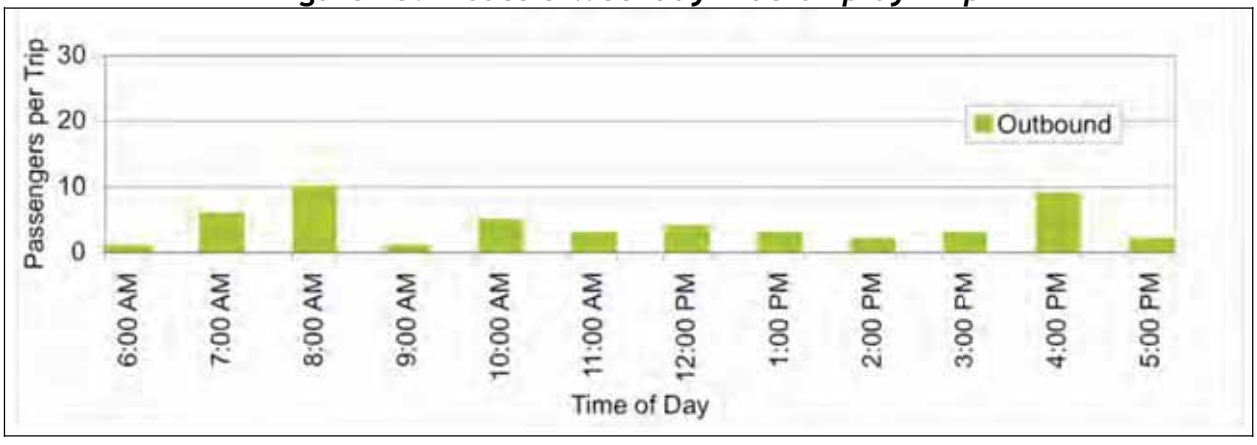
Route 5 carries only 49 trips per weekday, making Route 5 the second lowest ridership route in the MTA system. Most of these trips are for work or school purposes, and the most heavily

Figure 12: Route 5 Pinard/Bremer Street



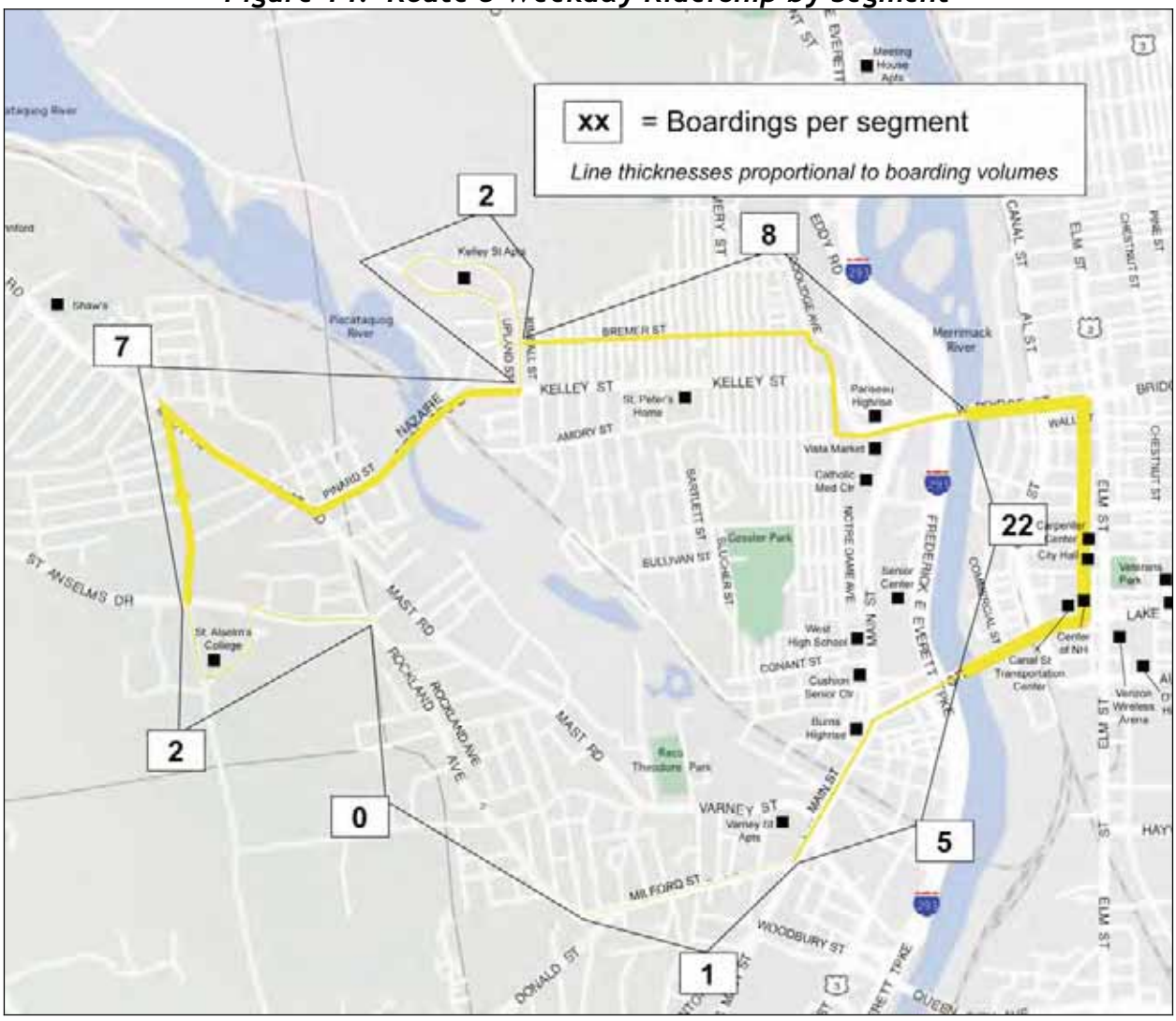
utilized trips are at 8:00 am and 4:00 pm (see Figure 13). These two trips carry 10 and 9 passengers, respectively. All other trips carry 5 or fewer passengers. Average ridership per round trip is only 4.1 passengers.

Figure 13: Route 5 Weekday Ridership by Trip



Nearly all ridership is to or from downtown Manchester or along South Main Street. Ridership to and from all other stops is very low, at 3 or fewer passengers per weekday. Ridership is extremely low on the half of the route that operates south of the Piscaquog River (see Figure 14). Along the entire segment between Main Street and St. Anselm College (and including the college), there are only three riders per day.

Figure 14: Route 5 Weekday Ridership by Segment



Productivity

Because of Route 5's very low ridership, route productivity is also very low. By most measures, Route 5's productivity is only about 33% of MTA's system average. Relative to other routes, Route 5 is the worst or second worst performing route (see Table 11).

Table 11: Route 5 Performance Measures

	System Avg	Route 5	Route 5 Rank
Weekdays			
Average Daily Ridership	147	**49**	**12 of 13**
Pax/Round Trip	12.2	**4.1**	**13 of 13**
Pax/VSH	14.7	**5.4**	**13 of 13**
Pax/VSM	1.1	**0.5**	**12 of 13**

Overall Assessment and Potential Changes

Route 5 performs very poorly by all measures. This poor performance is likely due to a number of factors: low demand in the service area, the inconvenient loop configuration, and duplication of service with Route 6 Gossler/St. Anselm. Potential changes include:

- Reconfigure Routes 5 and 6 into new line-haul routes that provide simpler and more direct service.
- Replace Route 5 and Route 6 service with flex-route service.
- Discontinue service.

Route 6 Gossler/St. Anselm

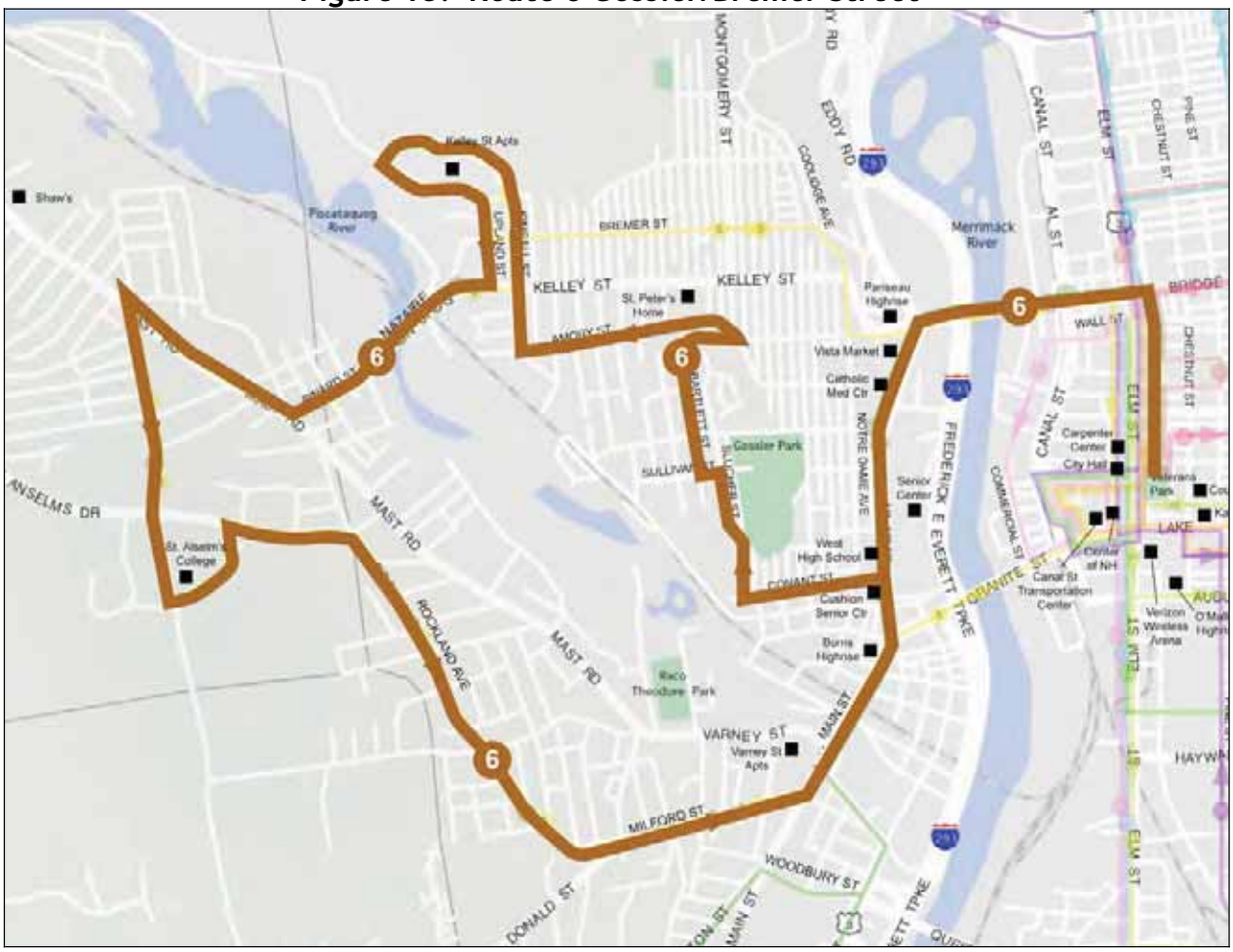
Route 6 Gossler/St. Anslem is a second loop route that operates to and from downtown Manchester via St. Anselm College (see Figure 15). All Route 6 service operates counter-clockwise (opposite to Route 5). Service starts at Veterans Park and ends at Elm and Wall Streets. The major difference from Route 5 is that Route 6 operates along McGregor Street past Vista Foods, Catholic Memorial Hospital and West High School, and Route 5 does not.

Service operates Monday through Saturday. Weekday service operates from 5:45 am to 7:00 pm, every 60 minutes from the beginning of service until 5:45 pm, and then with a final trip at 6:15 pm. Fourteen round trips are provided by weekday, which is the highest number of trips on any MTA route. Saturday service operates every 60 minutes from 7:45 am until 5:30 pm.

Table 12: Route 6 Service Statistics

	Weekdays	Saturdays
Span of Service	5:45am – 7:00pm	7:45am – 5:30pm
Round Trips	14	10
Headways (mins)	60	60

Figure 15: Route 6 Gossler/Bremer Street



Ridership

Route 6's ridership is 114 trips per weekday and 47 trips per Saturday. Although still low, weekday ridership on Route 6 is more than twice as high as on Route 5 Pinard/Bremer Street. Most ridership is to or from downtown or the Vista Foods on McGregor Street. Other ridership is spread along the route, and all ridership west of Main Street/McGregor Street is very low (see Figure 16). As with Route 5 Pinard/Bremer Street, ridership on the southern half of the route is very low.

School trips make up a large proportion of Route 6 trips (46%), and as such, the busiest trips are at 6:45 am and 2:45 pm (see Figure 17). The third and fourth busiest trips are late afternoon trips at 3:45 pm and 4:45 pm. The 6:15 pm trip carries the lowest ridership of all trips, indicating that an earlier end to service may be appropriate.

Figure 16: Route 6 Weekday Ridership by Segment

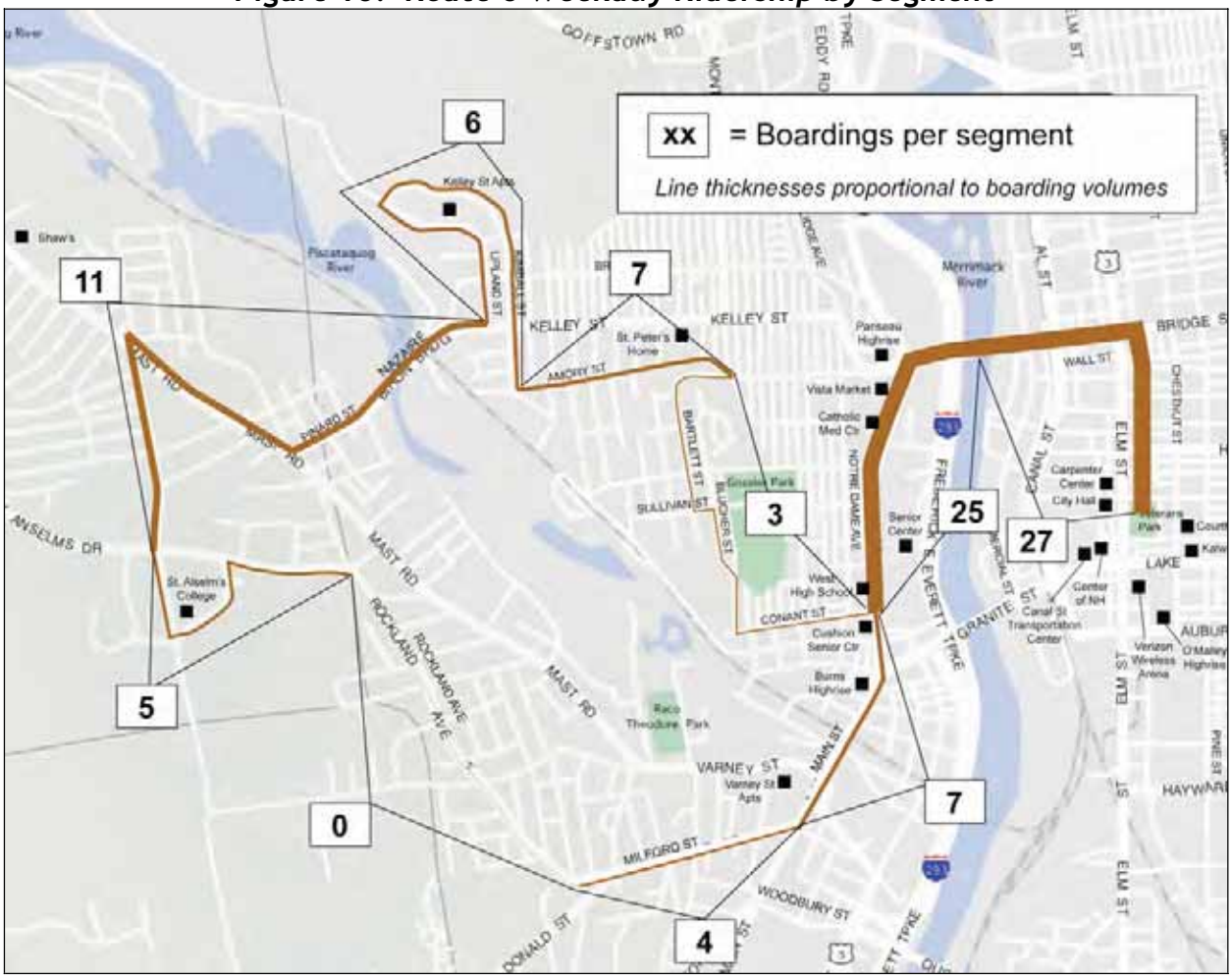
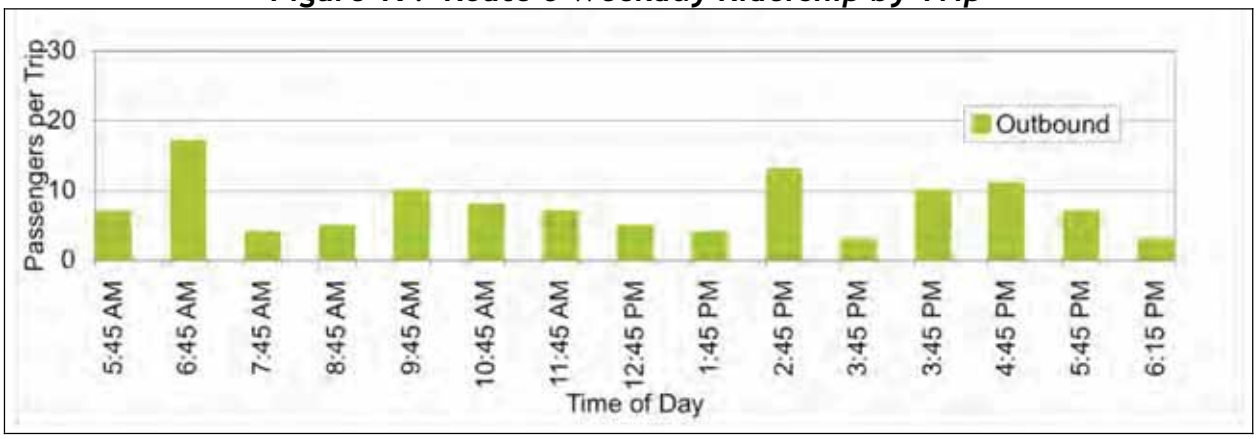


Figure 17: Route 6 Weekday Ridership by Trip



Productivity

Route 6's performance is significantly better than that of Route 5 Pinard/Bremer Street, but it is still low. As shown in Table 13, Route 6's performance is below average by all measures, and the route is in the bottom quartile of MTA service.

Table 13: Route 6 Performance Measures

	System Avg	Route 6	Route 6 Rank
Weekdays			
Average Daily Ridership	147	**114**	**10 of 13**
Pax/Round Trip	12.2	**8.1**	**11 of 13**
Pax/VSH	14.7	**10.8**	**9 of 13**
Pax/VSM	1.1	**0.9**	**9 of 13**
Saturdays			
Average Daily Ridership	77	**47**	**8 of 10**
Pax/ Round Trip	11.0	**4.7**	**8 of 10**
Pax/VSH	12.6	**5.9**	**8 of 10**
Pax/VSM	1.0	**0.6**	**7 of 10**

Green = Above average/median; Red = below average/median

Potential Changes

As with Route 5 Pinard/Bremer Street, Route 6's poor performance is likely due to low demand in the service area, the inconvenient loop configuration, and duplication of service with Route 5. Potential changes would be similar to those for Route 5 and include:

- Reconfigure Routes 5 and 6 into new line-haul routes that provide simpler and more direct service.
- Replace Route 5 and Route 6 service with flex-route service.

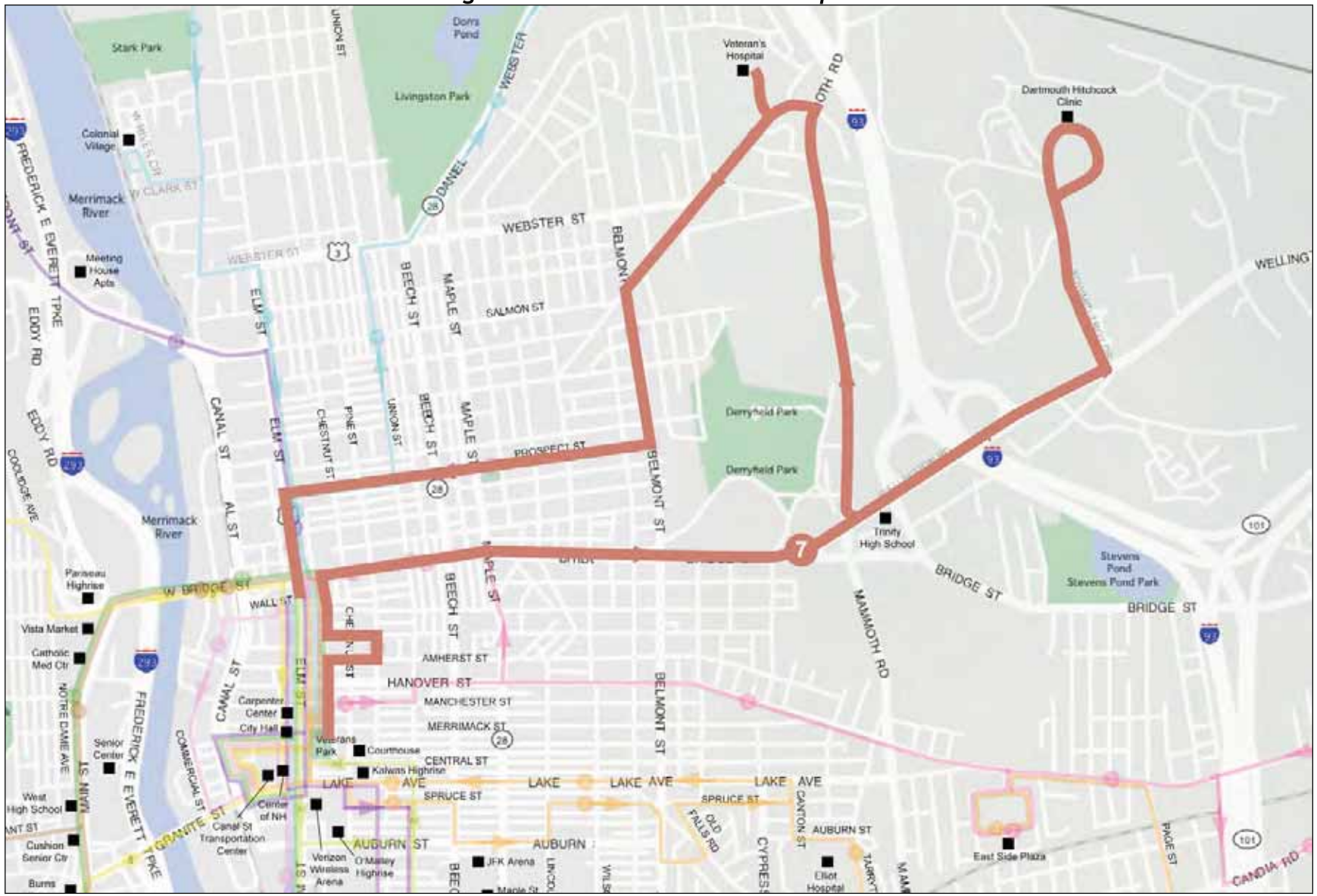
As part of a reconfiguration of Route 6 into a line-haul route, service could also be extended outbound along Mast Road to serve Shaws and Hannaford.

Route 7 Veterans Hospital

Route 7 Veterans Hospital serves Veterans Hospital and the Dartmouth Hitchcock Clinic. The route operates largely as a counter-clockwise loop via Veterans Hospital with a long route deviation to the Dartmouth Hitchcock Clinic (see Figure 18). Service begins at Veterans Park and ends at Elm and Wall Streets. The route is very circuitous.

Service operates Monday through Saturday. Weekday service operates from 6:15 am to 6:55 pm, every 60 minutes from the beginning of service until 5:15 pm, and then with a final trip at

Figure 18: Route 7 Veterans Hospital



6:00 pm. Thirteen round trips are provided by weekday. Saturday service operates every 60 minutes from 8:15 am until 4:55 pm.

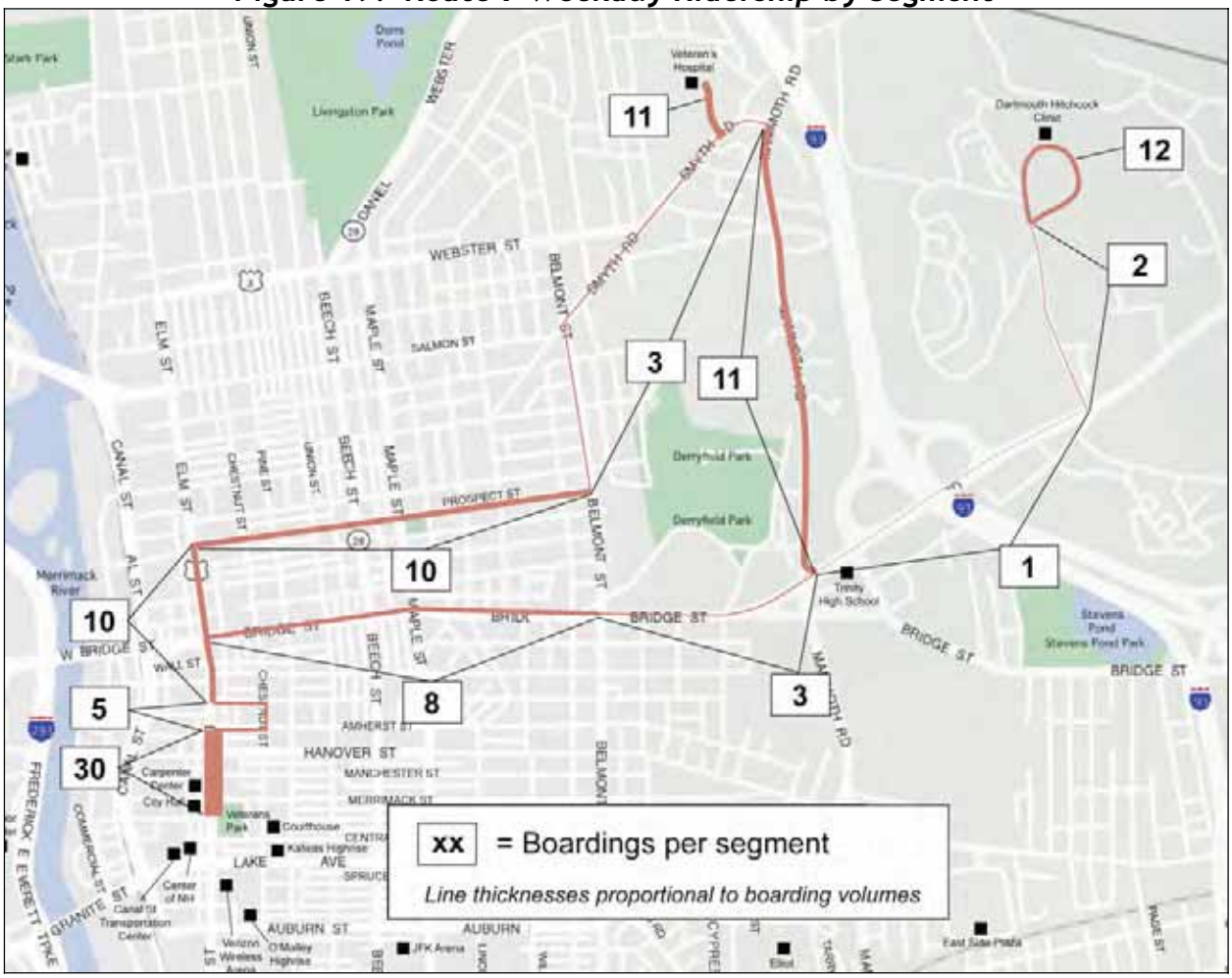
Table 14: Route 7 Service Statistics

	Weekdays	Saturdays
Span of Service	6:15am – 6:55pm	7:45am – 5:30pm
Round Trips	13	9
Headways (mins)	45-60	60

Ridership

Route 7 carries 157 passengers per day, which places the route near the middle relative to the MTA system. As shown in Figure 19, most ridership is to and from downtown Manchester. Ridership west of Belmont Street is largely to and from the Dartmouth Hitchcock Clinic, the Veterans Hospital, and along Mammoth Road. There are a number of very low ridership segments, but these are to or from the higher ridership areas.

Figure 19: Route 7 Weekday Ridership by Segment

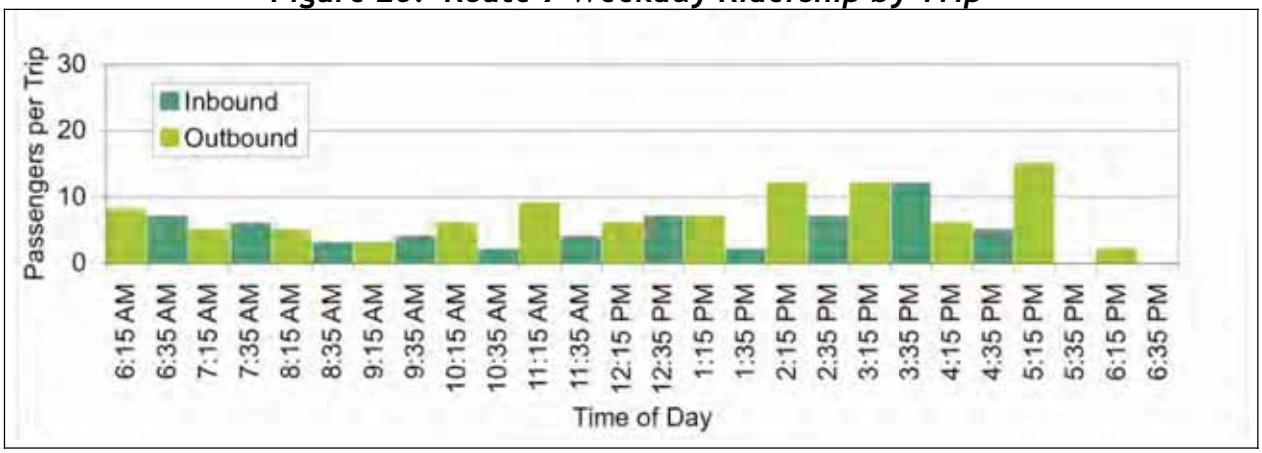


Most trips that are made on Route 7 are made for shopping or for medical appointments (see Table 15). As a result, the heaviest ridership trips are in the afternoon, when ridership per trip can exceed 10 passengers per trip. Ridership in the morning is significantly lower at 5 passengers per trip (see Figure 20). There are only 2 riders after 5:30 pm, indicating little demand for later service.

Table 15: Route 7 Trip Purposes

Trip Purpose	Percent of Riders
Home-based-work	21%
Home-based-shopping	26%
Home-based-school	3%
Home-based-medical	26%
Home-based-personal	6%
Home-based-other	9%
Non-home-based	9%
Total	100%

Figure 20: Route 7 Weekday Ridership by Trip



Productivity

Route 7's performance is at or near the middle of the MTA system (see Table 16). Weekday ridership is just above average, passengers per round trip is just below average, and passengers per vehicle service hour and mile is above average. In terms of Route 7's rank relative to other routes, it is the median performer for weekday ridership and passengers per round trip. It ranks sixth in terms of passengers per service hour and fourth in terms of passengers per vehicle miles.

Table 16: Route 7 Performance Measures

	System Avg	Route 7	Rt 7 Rank
Weekdays			
Average Daily Ridership	147	155	**7 of 13**
Pax/Round Trip	12.2	11.9	**7 of 13**
Pax/VSH	14.7	16.2	6 of 13
Pax/VSM	1.1	1.4	4 of 13
Saturdays			
Average Daily Ridership	77	61	6 of 10
Pax/ Round Trip	11.0	6.8	5 of 10
Pax/VSH	12.6	9.2	6 of 10
Pax/VSM	1.0	0.8	5 of 10

Green = Above average/median; Red = below average/median

Route 7 is also close to the middle of the MTA system for Saturday performance, but is below average.

Overall Assessment and Potential Changes

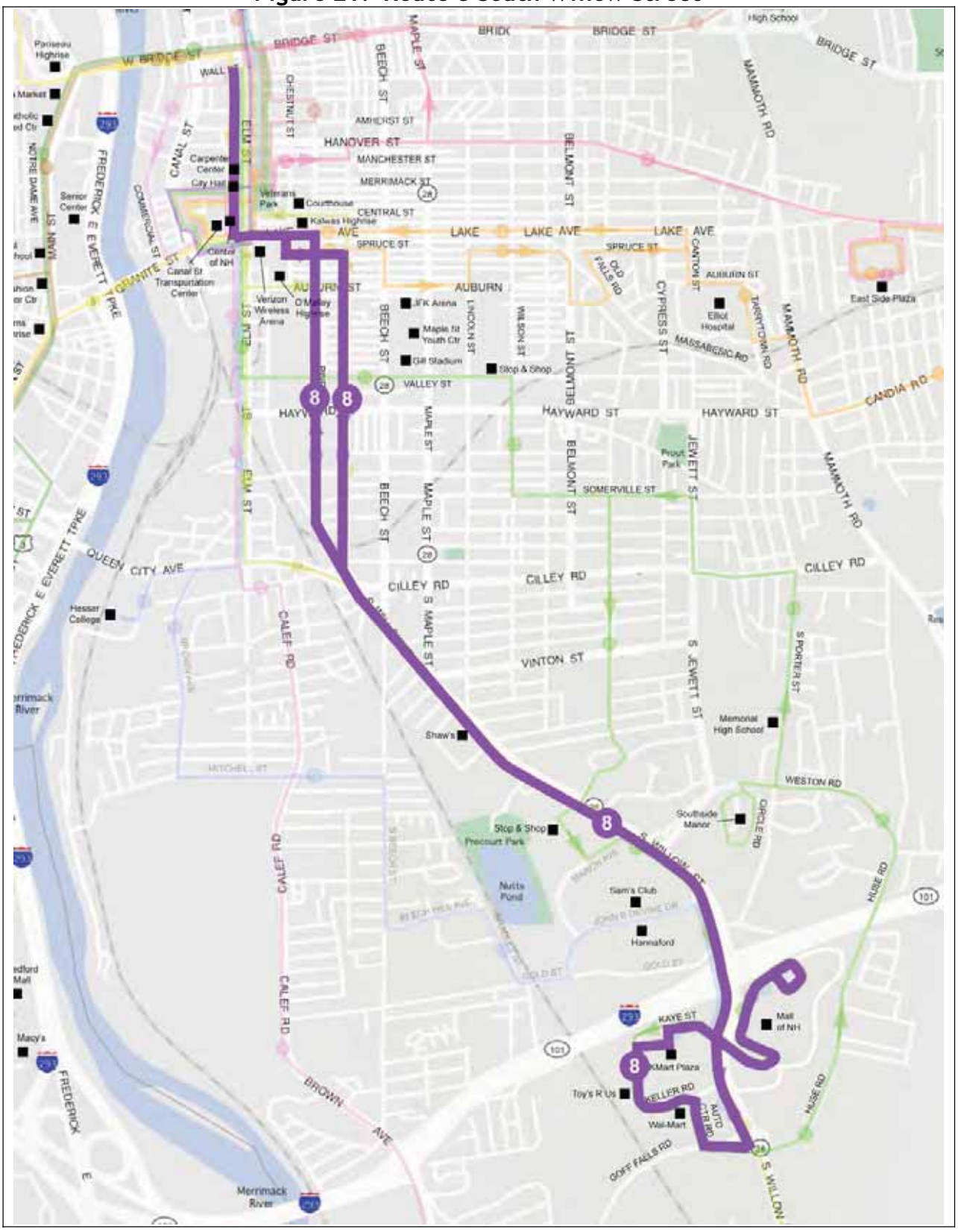
Route 7 is the only route that serves two important destinations, which are the Veterans Hospital and the Dartmouth Hitchcock Clinic, and its ridership is reasonably good. The outer end of the route is necessarily circuitous, as I-93 creates a barrier that precludes a more direct routing. At the inner end of the route, however, there is no clear rationale for operating outbound service along Prospect Street and inbound service along Bridge Street. In this case, the use of a single road for inbound and outbound service would simplify service and eliminate the inner loop.

Alternatively, it would also be possible to split the route into two routes, one of which operates to and from the Dartmouth Hitchcock Clinic and another that operates to and from the Veterans Hospital. In the case, it would also be possible to extend service on the Veterans Hospital route beyond the Veterans Hospital to the Hannaford on Daniel Webster Highway.

Route 8 South Willow Street

Route 8 South Willow Street operates between downtown Manchester and the Mall of New Hampshire (see Figure 21). Service begins at Elm and Wall Streets and ends at Veterans Park. Route 8 also serves the retail area along Keller Road and Kaye Street. It is one of MTA's more direct routes and serves the Mall of NH and Wal-Mart on Keller Road, which are some of the highest ridership activity centers outside of downtown.

Figure 21: Route 8 South Willow Street



Service operates Monday through Saturday. Weekday service operates from 5:30 am to 6:10 pm, every 60 minutes at clock-face headways. Thirteen round trips are provided each weekday. Saturday service operates every 60 minutes from 7:30 am until 4:10 pm.

Table 17: Route 8 Service Statistics

	Weekdays	Saturdays
Span of Service	5:30am – 6:10pm	7:30am – 4:10pm
Round Trips	13	8
Headways (mins)	45-60	60

Ridership

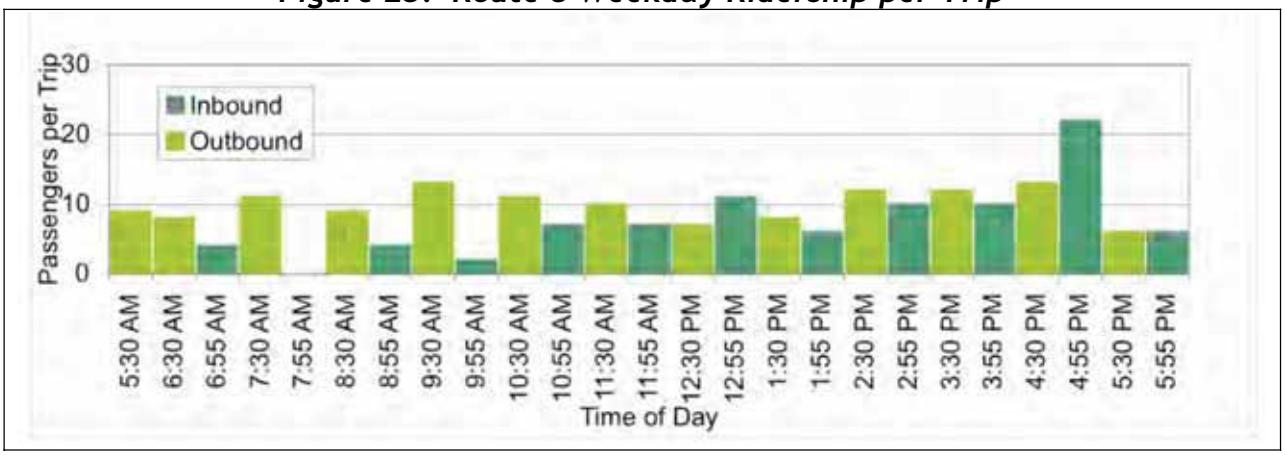
Route 8 carries 218 passengers per weekday, which is the third highest in the MTA system. As with all routes, most ridership is to and from downtown Manchester (see Figure 22). However,

Figure 22: Route 8 Weekday Ridership by Segment

intermediate ridership is also high, especially along South Willow Street. Ridership to and from the Mall of NH is also relatively high.

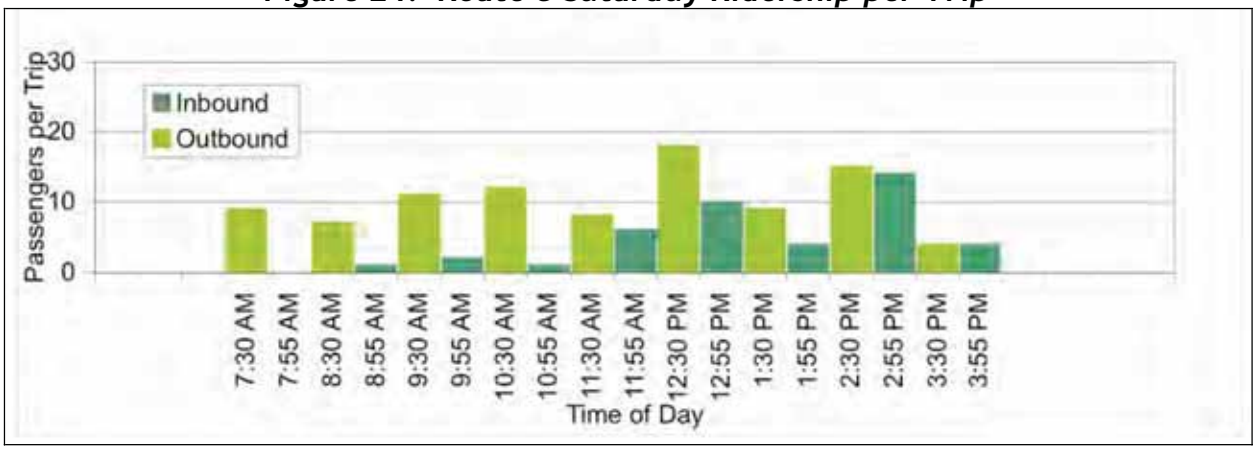
Although the major activity centers along Route 8 are retail stores, the majority of trips made on Route 8 are work trips (59% of all trips), followed by shopping trips (18%). In the morning, nearly all ridership is outbound (see Figure 23). In the afternoon, ridership is more evenly balanced. In total, outbound ridership is significantly higher than inbound ridership (129 outbound trips versus 89 inbound trips). This imbalance implies that many use the bus to travel to the mall area in the afternoon, and then return by another means after service has ended. This indicates that there is a demand for later service.

Figure 23: Route 8 Weekday Ridership per Trip



On Saturdays, there is a similar imbalance, with 93 outbound riders and only 42 inbound riders. Saturday service ends early, with the last inbound trip leaving the mall at 4:10. Later Saturday service also appears warranted.

Figure 24: Route 8 Saturday Ridership per Trip



Productivity

Route 8 is above average in all respects, and in most categories, is the third or fourth best performer in the MTA system. This is the case on weekdays as well as on Saturdays. Furthermore, Saturday performance is nearly as high as weekday performance.

Table 18: Route 8 Performance Measures

	System Avg	Route 8	Route 8 Rank
Weekdays			
Average Daily Ridership	147	**218**	**3 of 13**
Pax/Round Trip	12.2	**16.8**	**3 of 13**
Pax/VSH	14.7	**18.0**	**4 of 13**
Pax/VSM	1.1	**1.3**	**6 of 13**
Saturdays			
Average Daily Ridership	77	**135**	**4 of 10**
Pax/ Round Trip	11.0	**16.9**	**3 of 10**
Pax/VSH	12.6	**13.8**	**4 of 10**
Pax/VSM	1.0	**1.0**	**4 of 10**

Green = Above average/median; Red = below average/median

Operating Issues

One particular operating issue that has been identified on Route 8—and other routes serving the Mall of New Hampshire—is difficult access and egress to the mall, particularly during holiday periods. Circulation within the mall area can be very congested, and there are often significant delays in existing from the mall.

As is the case with most malls, the Mall of New Hampshire is set well back from South Willow Street. Furthermore, there are no sidewalks on any of the mall access roads, and walking conditions on the access roads are very poor. As a result, to serve the mall, buses need to operate in and out of the mall, which makes delays unavoidable. To address this situation, layover time needs to be built into mall end of the route. Special schedules may also be required during the Christmas shopping season.

Overall Assessment and Potential Changes

MTA's best performing routes are those that serve shopping and retail areas, and Route 8 is the best performing route that serves retail establishments at and around the Mall of New Hampshire. Furthermore, the route serves both workers and shoppers.

While Route 8 already performs well, there appear to be opportunities to further strengthen the route. These include:

- Route 8 travels outbound from downtown on Union Street and inbound on Pine Street. As with many other MTA routes, there is not a clear rationale for the operation on

different streets, and it would be possible to simplify the route by operating service in both directions along the same street—for example, Union Street.

- A number of new retail establishments have been developed along South Willow Street and along John E. Devine Drive. These include Stop & Shop, Sam's Club, and Hannaford. It would be possible serve these new stores by adding a deviation through Stop & Shop to right on March Ave to left on John E. Devine Drive.
- Add layover time at the Mall of New Hampshire to prevent mall congestion from delaying inbound service. Also adjust layover and inbound departure times during holiday periods to reflect higher levels of mall congestion during those periods (for example, earlier departures from the mall to maintain downtown arrival times).
- Provide evening service.

One disadvantage to scheduled layovers at the mall would be that the current outer loop would require inbound passengers from the Keller Road/Kaye Street area to wait through the layovers at the mall. To avoid this situation, it may also be desirable to operate inbound service via Keller Road and Kaye Street.

Finally, given the number of routes that presently operate to and from the Mall of New Hampshire, and potential new connections such as with Route 13 Bedford Mall (see Route 13 section) and the airport, the mall could be used as a secondary transit hub. To provide frequent connections between downtown and the mall, and to and from other routes serving the mall, consideration can also be given to improving Route 8 service to every 30 minutes. Alternatively, Route 12 South Beech Street/Mall of NH service, which also operates between downtown and the Mall, could be scheduled to alternate trips with Route 8. This would also provide service between downtown and the mall every 30 minutes.

Route 9 Daniel Webster Highway/River Road

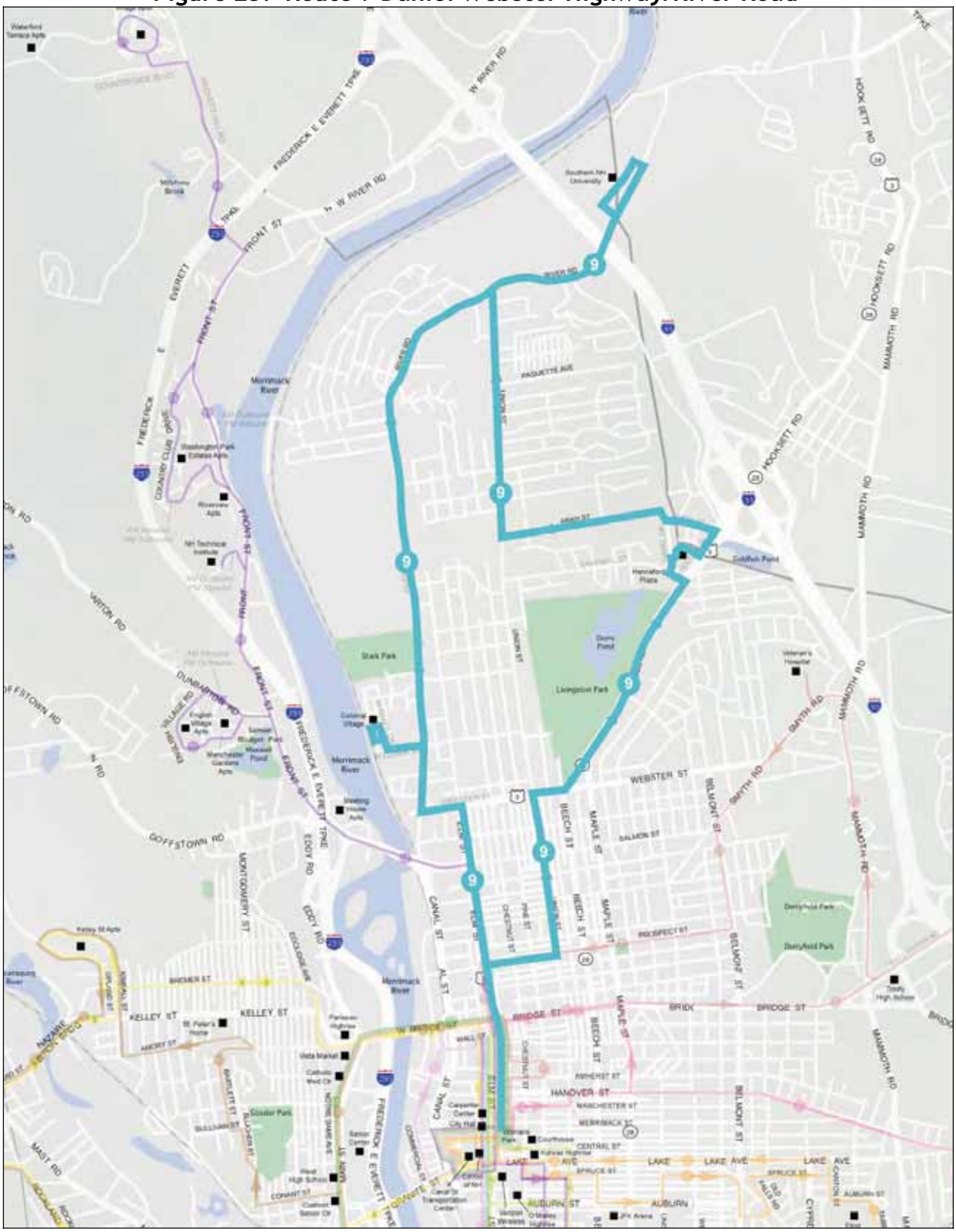
Route 9 Daniel Webster Highway/River Road operates between downtown Manchester and Southern NH University (see Figure 25). The route operates largely as a loop with outbound service via Union Street, Daniel Webster Highway, Arah Street and Union Street. Major stops include North Side Plaza and Southern NH University at the outer end of the route. Inbound service operates via River Road and Elm Street. Outbound service begins at Veterans Park, and inbound service ends at Elm and Wall Streets.

Service operates Monday through Saturday. Weekday service operates from 6:15 am to 6:00 pm, every 60 minutes at clock-face headways. Twelve round trips are provided each weekday. Saturday service operates every 60 minutes from 8:15 am until 5:00 pm.

Table 19: Route 9 Service Statistics

	Weekdays	Saturdays
Span of Service	6:15am – 6:10pm	8:15am – 5:00pm
Round Trips	12	9
Headways (mins)	60	60

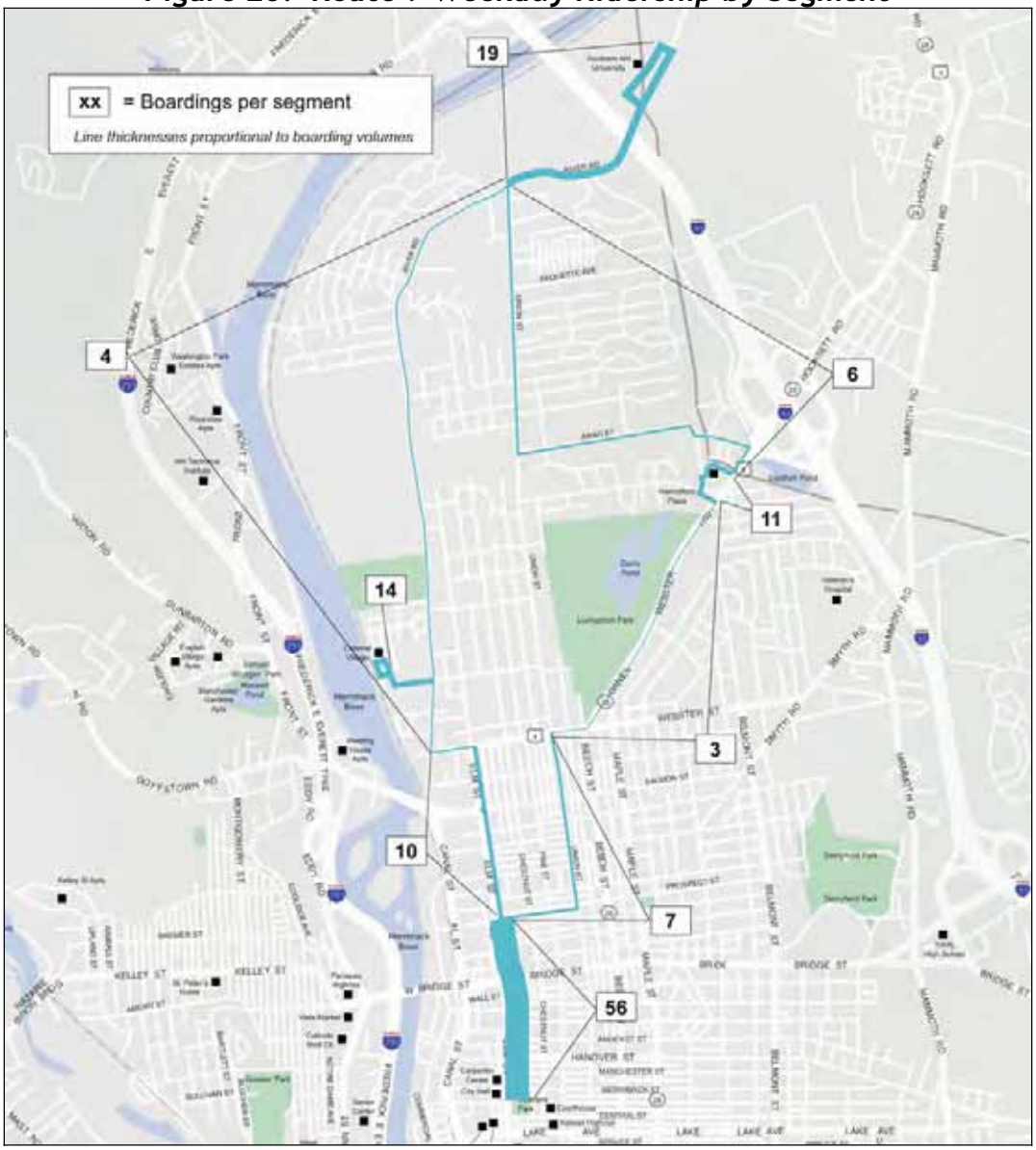
Figure 25: Route 9 Daniel Webster Highway/River Road



Ridership

Route 9 carries 163 passengers per weekday, which is the sixth highest in the MTA system. Most ridership is to and from downtown Manchester (see Figure 26); other high ridership stops are Southern NH University (19 riders per weekday), North Side Plaza (11 riders), and Colonial Village (14 riders). In other areas, ridership is relatively low. This is especially true along River Road north of Colonial Village (4 riders per weekday) and along Daniel Webster Highway (4 trips per weekday.

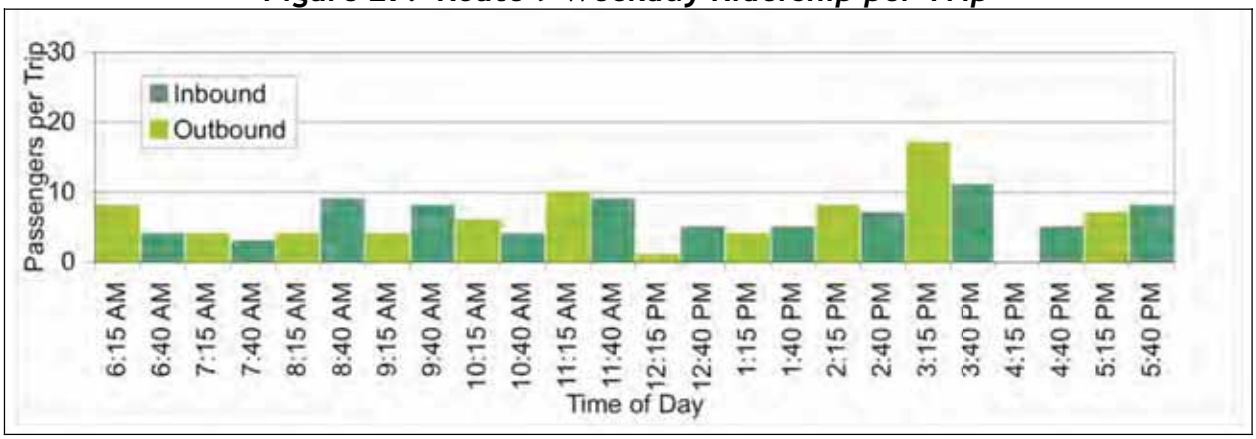
Figure 26: Route 9 Weekday Ridership by Segment



Route 9 riders make trips for a variety of reasons, with the largest volumes of trips for shopping, school, and work. Given this mix of trip purposes, ridership is spread fairly evenly throughout the day. However, because a lower proportion of trips are made to and from work than on many

other routes, peak period ridership is lower than midday ridership. Also, unlike on many other MTA routes, there is not a significant drop in ridership after 5:00 pm.

Figure 27: Route 9 Weekday Ridership per Trip



Productivity

On weekdays, Route 9 performs above average in all respects, and in all categories, is the fifth or sixth best performer in the MTA system. Saturday performance is significantly lower, and below average for the MTA system.

Table 20: Route 9 Performance Measures

	System Avg	Route 9	Route 9 Rank
Weekdays			
Average Daily Ridership	147	**163**	**6 of 13**
Pax/Round Trip	12.2	**13.6**	**5 of 13**
Pax/VSH	14.7	**17.0**	**5 of 13**
Pax/VSM	1.1	**1.3**	**5 of 13**
Saturdays			
Average Daily Ridership	77	**63**	**5 of 10**
Pax/ Round Trip	11.0	**6.4**	**7 of 10**
Pax/VSH	12.6	**9.6**	**5 of 10**
Pax/VSM	1.0	**0.7**	**6 of 10**

***Green** = Above average/median; **Red** = below average/median*

Operating Issues

Inbound, Route 9 deviates into Colonial Village, which is off of River Road. Buses enter Colonial Village on West Clark Street and then turn around in Colonial Village's parking lot off of West River Road. This turn around, which is difficult, could be avoided by revising the deviation to operate along Davis Street to Victoria Drive to West River Road or West Clark Street.

Overall Assessment and Potential Changes

Route 9, in a similar manner as most of MTA's other loop routes, attempts to cover a large area with a single bus. The route accomplishes this fairly successfully, but the loop operation is inconvenient, and most riders much make much longer trips than would otherwise be necessary. Some segments are also very lightly utilized (Daniel Webster Highway and River Road).

Potential changes to the route would be to convert it into a line-haul route that serves the highest ridership locations but eliminates service to the low ridership segments. The resulting route (from Colonial Village to Southern NH University via Readey and Carpenter Streets to Union Street to Campbell Street to North Side Plaza to Bicentennial Drive to River Road to SNHU) would still be circuitous, but faster than the present route for most riders.

A second alternative would be to split the route in two new routes. One route would operate more directly to SNHU via Colonial Village and Union Street, and the second would operate to North Side Plaza via Daniel Webster Highway. This route could also operate beyond North Side Plaza along I-93 to the new Target and other new stores on River Road at I-93 that are currently not served.

Route 10 Valley Street/Weston Street

Route 10 Valley Street/Weston Street operates between downtown Manchester and the Mall of New Hampshire (see Figure 28). The route operates largely as a loop and serves residential areas east of South Willow Street, as well as a number of schools. Outbound service begins at Elm and Wall Streets, and inbound service ends at Veterans Park.

Service operates Monday through Saturday. Weekday service operates from 6:00 am to 5:55 pm pm, every 60 minutes at clock-face headways. Twelve round trips are provided each weekday. Ten round trips are provided on Saturdays, with service provided every 60 minutes from 8:00 am until 5:55 pm. Of all routes, this is the most service and the latest service provided on Saturday.

Table 21: Route 10 Service Statistics

	Weekdays	Saturdays
Span of Service	6:00am – 5:55pm	8:00am – 5:55pm
Round Trips	12	10
Headways (mins)	60	60

Ridership

Route 10 carries 240 passengers per weekday, and is the second highest ridership route in the MTA system. Ridership is heavily oriented toward the two ends of the route and along Valley Street (see Figure 29). There is relatively little ridership to or from locations along the loop portion of the route.

Figure 28: Route 10 Valley Street/Weston Street

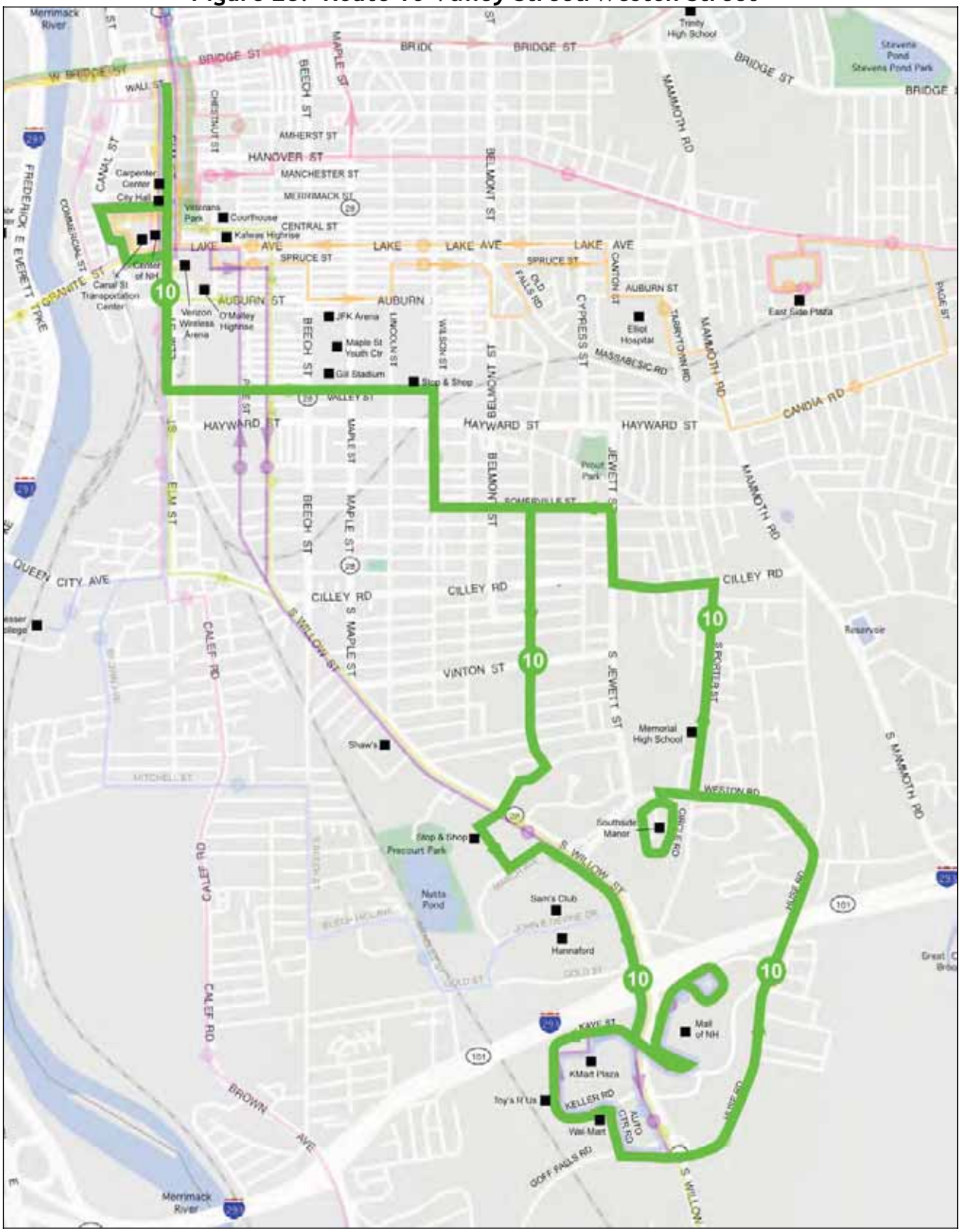
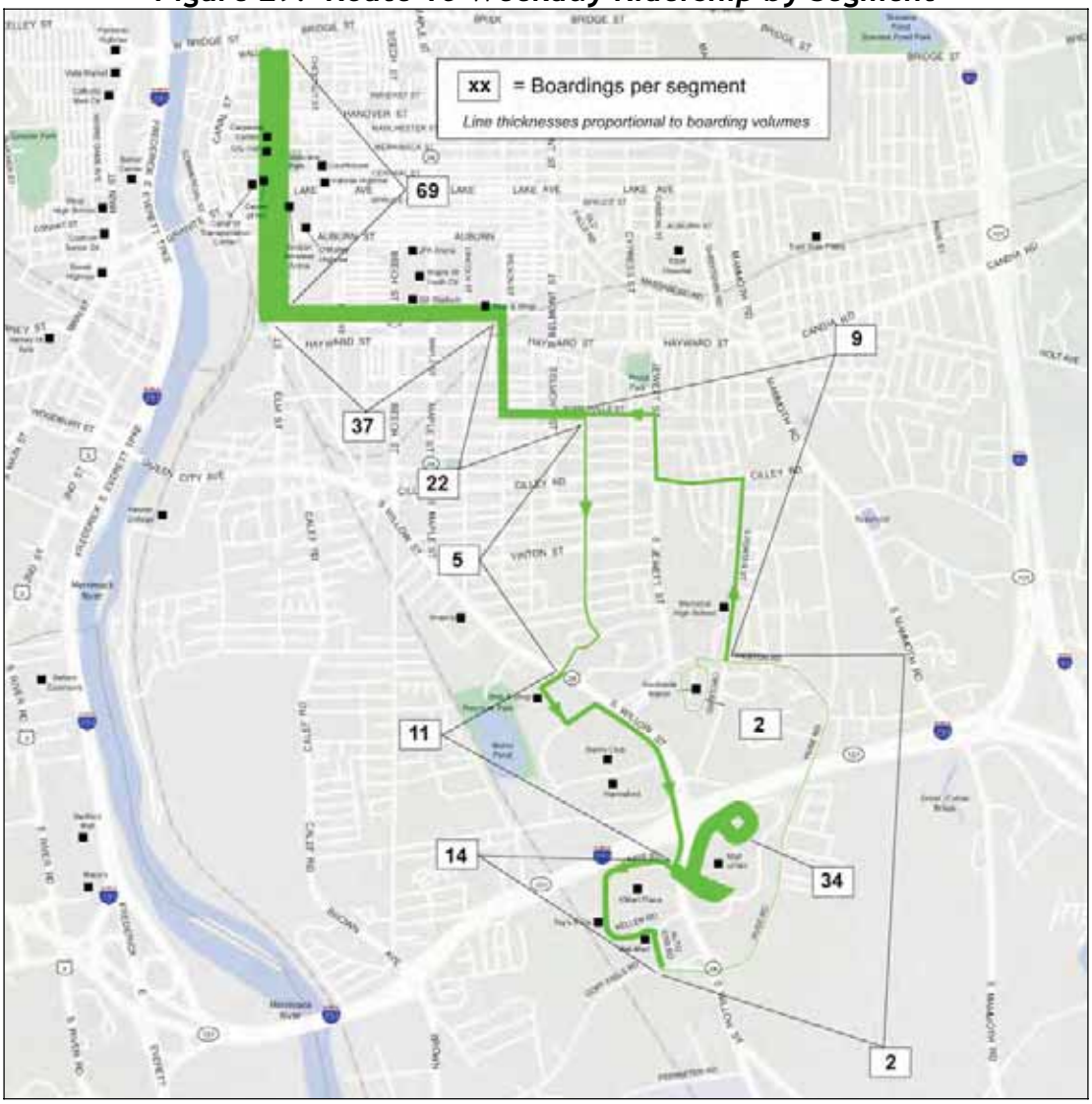


Figure 29: Route 10 Weekday Ridership by Segment



The predominant trip purposes of Route 10's riders are work and shopping. The predominant direction of travel is outbound in the morning, and inbound in the afternoon, and ridership volumes are highest in the afternoon (see Figure 30). Trips after 5:00 pm carry higher volumes than in the morning, indicating that there may be demand for later service.

On Saturdays, ridership averages 209 trips, which is nearly as high as on weekdays. Average ridership per trip is actually higher than on weekdays. However, as shown in Figure 31, ridership before 10:00 am is very low, indicating that a later start to Saturday service is warranted. Saturday afternoon ridership levels are higher than on weekdays. Furthermore, the last trip is the second most utilized trip, indicating that later service should be considered.

Figure 30: Route 10 Weekday Ridership by Trip

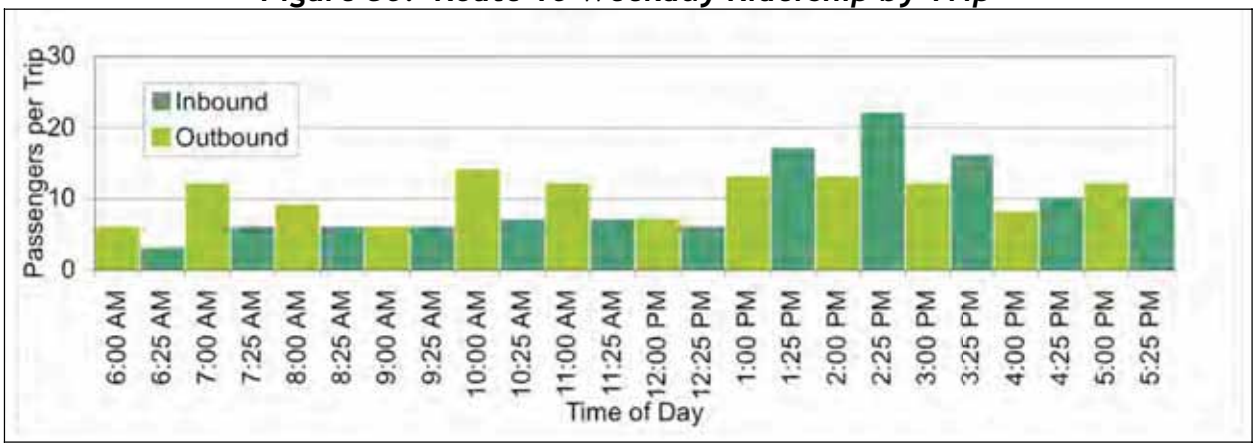
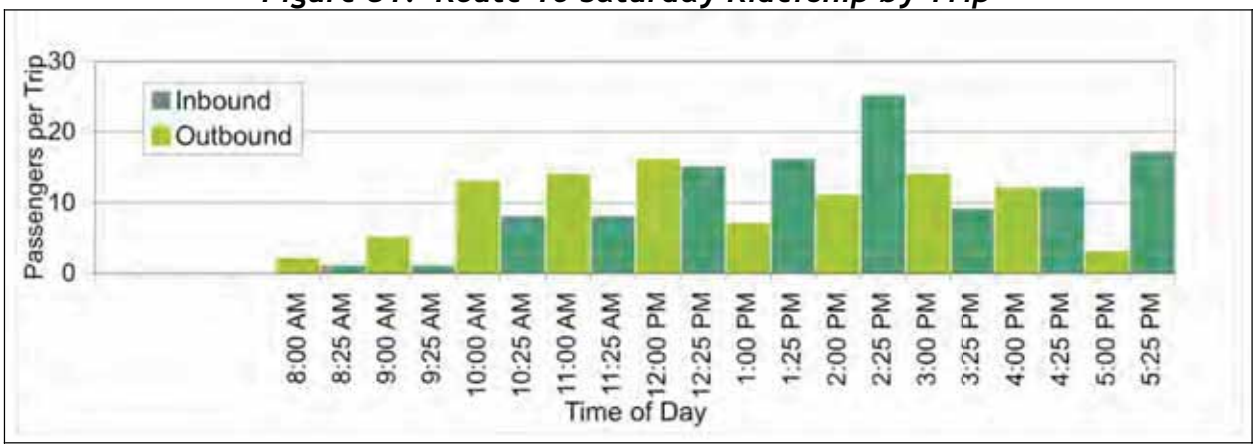


Figure 31: Route 10 Saturday Ridership by Trip



Productivity

In all respects, Route 10 is the best performing route in the MTA system (see Table 22). This is the case on weekdays and on Saturdays. In addition, on Saturdays, although total ridership is

Table 22: Route 10 Performance Measures

	System Avg	Route 10	Rt 10 Rank
Weekdays			
Average Daily Ridership	147	**240**	**2 of 13**
Pax/Round Trip	12.2	**20.0**	**1 of 13**
Pax/VSH	14.7	**24.6**	**1 of 13**
Pax/VSM	1.1	**2.0**	**1 of 13**
Saturdays			
Average Daily Ridership	77	**209**	**2 of 10**
Pax/ Round Trip	11.0	**26.1**	**1 of 10**
Pax/VSH	12.6	**31.0**	**1 of 10**
Pax/VSM	1.0	**2.4**	**1 of 10**

***Green** = Above average/median; **Red** = below average/median*

slightly lower than on weekdays (209 trips versus 240 trips), because service levels are lower, productivity is higher than on weekdays.

Overall Assessment

Route 10 performs very well. It attracts the second highest ridership of any MTA route, and relative to the amount of service provided, is the most productive route. However, in spite of Route 10's overall strong performance, ridership along the loop portion is low. This is likely because trips to and from the areas along the loop are inconvenient, and low ridership demand in some areas such as Huse Road.

Service could be made more attractive by converting the loop segment of the route to a line-haul segment. This could be done by operating service in both directions along Jewitt Street and Jobin Drive, which would roughly split the distance between the two halves of the loop. Most areas served by the loop would be within walking distance of the new line-haul segment.

As described above, changes to Route 10's span of service also appear to be warranted. Ridership on the last trips on both weekdays and Saturdays is relatively high, and later trips would also likely attract additional ridership. On Saturdays, trips before 10:00 carry very few riders, and could be shifted to early evening.

Route 11 Front Street/Hackett Hill

Route 11 operates between downtown Manchester and Countryside Village off of Hackett Hill Road (see Figure 32). The route travels along Front Street for much of its length, with deviations to serve two apartment complexes and NH Technical College. Outbound service begins at Veterans Park, and inbound service ends at Elm and Wall Streets.

Service operates differently in the morning and afternoon. In the morning:

- Outbound service deviates to NH Technical College, while inbound service operates directly past. This is to serve outbound school trips.
- Inbound service deviates off of Front Street to Washington Park Estates and Manchester Gardens. This is to serve work trips from those apartments.

In the afternoon (after 12 noon), this pattern is reversed. Inbound service operates via NH Technical College, and outbound service operates via the apartment complexes.

Service operates Monday through Saturday. Weekday service operates from 6:50 am to 6:45 pm, every 60 minutes at clock-face headways, except for the last trip, which departs 75 minutes after the second to last trip. Twelve round trips are provided each weekday. Eight round trips are provided on Saturdays, with service provided every 60 minutes from 8:50 am until 4:30 pm.

Figure 32: Route 11 Front Street

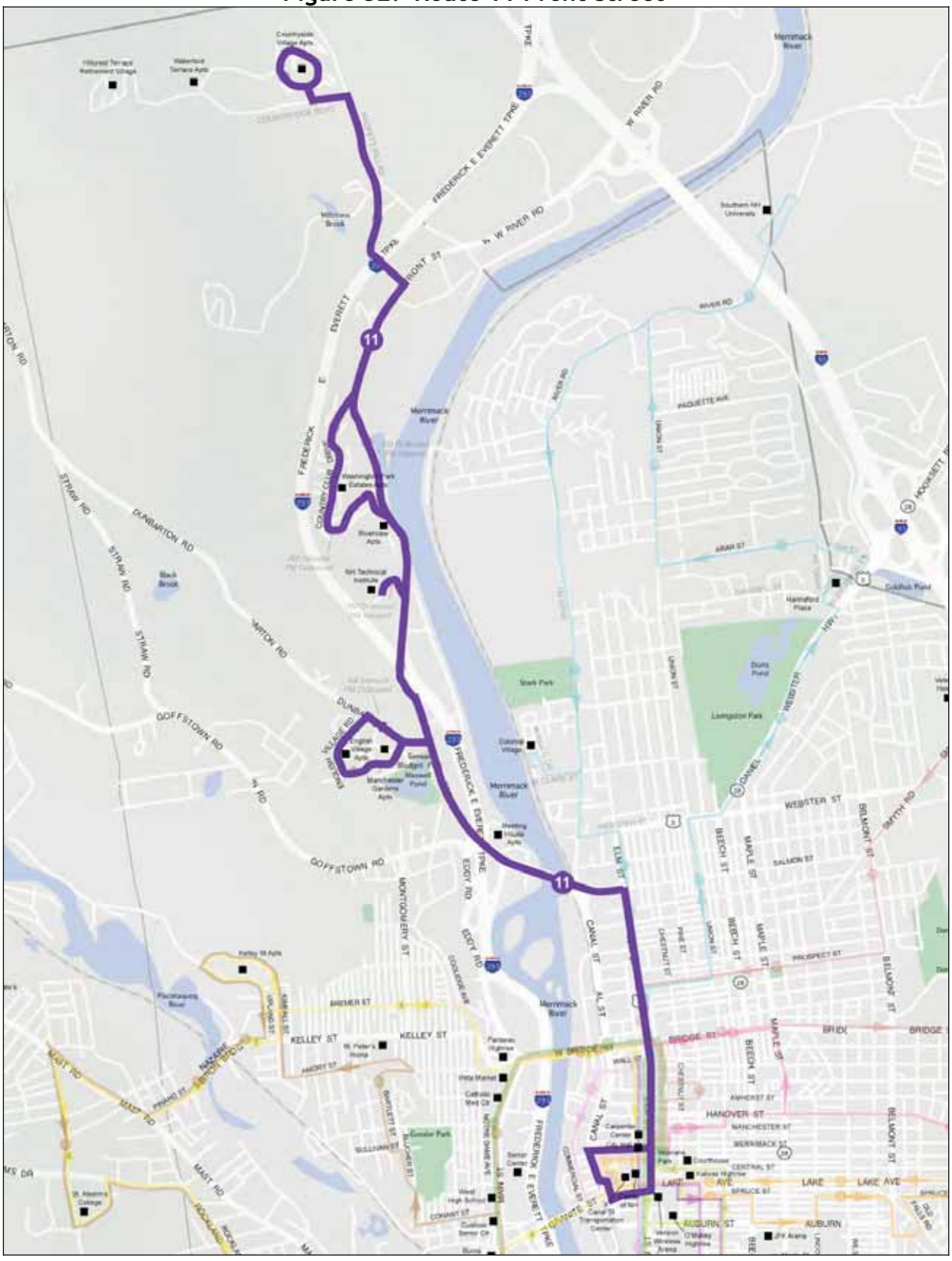


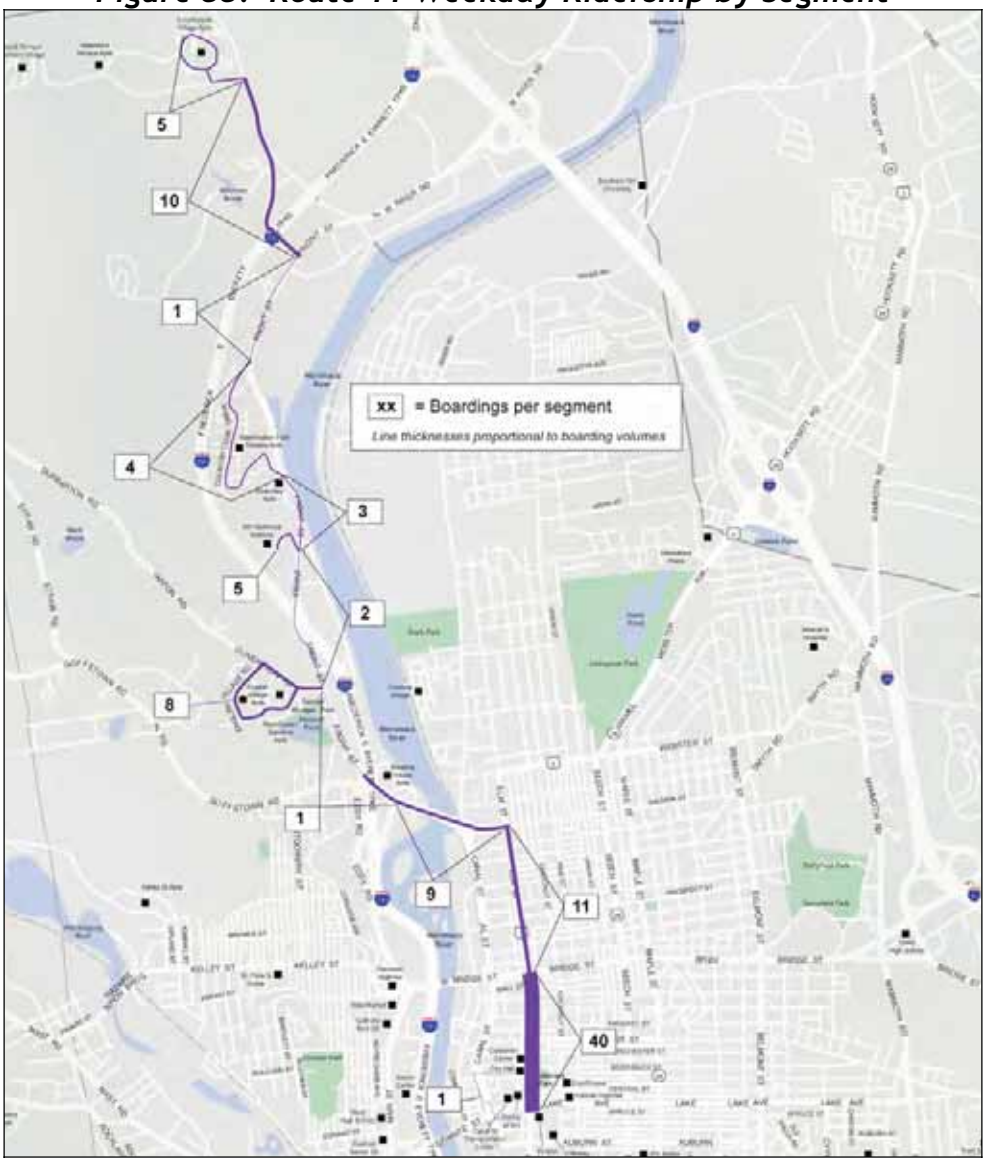
Table 23: Route 11 Service Statistics

	Weekdays	Saturdays
Span of Service	6:50am – 6:45pm	8:50am – 4:30pm
Round Trips	12	8
Headways (mins)	60 - 75	60

Ridership

Route 11 carries 116 passengers per day on weekdays and 34 on Saturdays. These ridership levels place Route 11 below average for weekday service and second lowest for Saturday service. Ridership is heavily oriented toward the downtown end of the route, especially on the east side of the Merrimack River (see Figure 33). On the west side of the river, ridership is light

Figure 33: Route 11 Weekday Ridership by Segment



and distributed along the route. The highest ridership stops on the west side of the river are those at English Village Apartments and Manchester Gardens Apartments (8 total weekday boardings), New Hampshire Technical College (5 boardings), Washington Park Estates (4 boardings), Hackett Hill Road (10 boardings), and Countryside Village Apartments (5 boardings).

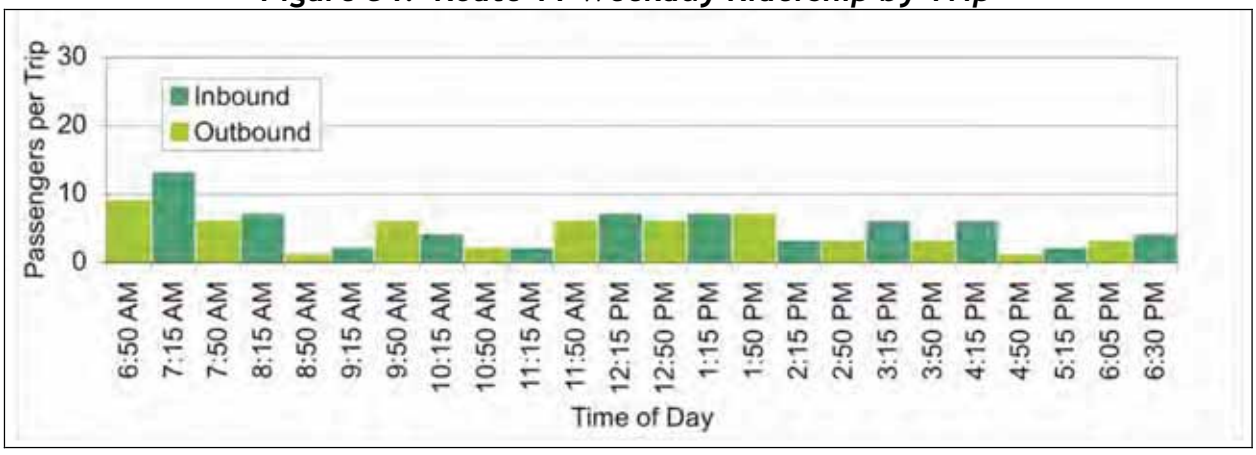
Route 11 riders use the route for a large variety of reasons. The most common reason is work, but work trips make up only 29% of all trips (see Table 24):

Table 24: Route 11 Trip Purposes

Trip Purpose	% of Riders
Home-based-work:	29%
Home-based-shopping:	14%
Home-based-school:	14%
Home-based-medical:	5%
Home-based-personal:	19%
Home-based-social/recreational:	0%
Home-based-other:	10%
Non-home-based:	10%
Total:	100%

Given this mix of trip purposes, ridership is distributed throughout the day (see Figure 34). The first outbound and first inbound trips are the only ones that carry more than 10 passengers, and many trips, especially in the later morning, carry only a handful of passengers.
Saturday ridership, as stated above, is very low. Average ridership per trip is only 3.4 passengers, and many trips carry zero, one, or two passengers. The highest ridership Saturday trip carries six passengers.

Figure 34: Route 11 Weekday Ridership by Trip



Productivity

Route 11's performance is low in all respects (see Table 25). On weekdays, in terms of passengers per round trip, VSH, and VSM, Route 11 performs below average in all measures,

and ranks 9 or 10 out of MTA's 13 routes. On Saturdays, performance is also below average in all respects, and Route 11 ranks the second lowest of all Saturday routes.

Table 25: Route 11 Performance Measures

	System Avg	Route 11	Rt 11 Rank
Weekdays			
Average Daily Ridership	147	**116**	**9 of 13**
Pax/Round Trip	12.2	**9.7**	**9 of 13**
Pax/VSH	14.7	**9.9**	**10 of 13**
Pax/VSM	1.1	**0.8**	**10 of 13**
Saturdays			
Average Daily Ridership	77	**34**	**9 of 10**
Pax/ Round Trip	11.0	**3.4**	**9 of 10**
Pax/VSH	12.6	**3.0**	**9 of 10**
Pax/VSM	1.0	**0.3**	**9 of 10**

***Green** = Above average/median; **Red** = below average/median*

Overall Assessment and Potential Changes

Route 11 provides the only service along Front Street and serves a large number of moderate income apartment complexes. In theory, this route should perform better. Potential causes for the low ridership likely include:

- The one-way operation via the apartment complexes along English Village Road and Country Club drive is very inconvenient, as it requires riders to travel far out of their way to make short trips.
- Many MTA riders use transit for shopping trips, but Route 11 does not serve any shopping areas.

There are a number of opportunities to address these issues and to make Route 11 service more attractive and to expand service coverage. These include:

- Operating service in both directions via the apartment complexes along English Village Road and Country Club drive.
- Expand service along Countryside Drive beyond Countryside Village Apartments to serve Waterford Terrace Apartments and Hillcrest Terrace Retirement Village.
- Provide access to shopping opportunities by extending service north along River Road to the new Target and other new stores just north of I-93.
- Provide direct access to Vista Foods and Catholic Memorial Hospital by re-routing the southern half of the route to cross the Merrimack River at Bridge Street instead of the Amoskeag Bridge.

Route 12 South Beech Street/Mall of New Hampshire

Route 12 operates between downtown and the Mall of New Hampshire along Elm Street, Brown Avenue, West Mitchell Street, South Beech Street, John E. Devine Drive and South Willow Street (see Figure 35). The route also serves the Keller Road/Kaye Street retail area.

There are two different variations that serve Hesser College in different ways. Inbound, all inbound trips serve Hesser College. Outbound, the first and last three trips operate via Hesser College, but the seven mid-day trips do not.

Route 12 operates Monday through Saturday. Weekday service operates from 6:30 am to 6:55 pm, every 60 minutes at clock-face headways. Twelve and a half round trips are provided each weekday. Ten round trips are provided on Saturdays, with service provided every 60 minutes from 8:00 am until 5:55 pm.

Table 26: Route 12 Service Statistics

	Weekdays	Saturdays
Span of Service	6:50am – 6:45pm	8:00am – 5:55pm
Round Trips	12.5	10
Headways (mins)	60	60

Ridership

Route 12 carries 203 passengers per day on weekdays and 151 on Saturdays. These figures rank Route 12 as MTA's fourth highest ridership route on weekdays and the third highest on Saturdays. As with other routes that serve the Mall of NH area, ridership is heaviest at the ends of the route (see Figure 36). Ridership at most intermediate points is low. However, Route 12 is the only route that provides service in most of this area.

Route 12's riders use the route for a wide variety of trip purposes. Work trips and shopping trips are the most common, but together account for less than half of all trips:

Home-based-work	24%
Home-based-shopping	24%
Home-based-school	4%
Home-based-medical	8%
Home-based-personal	8%
Home-based-social/recreation	0%
Home-based-other	8%
Non-home-based	20%
Total	100%

Because less than a quarter of all trips are work trips, ridership is lighter during peak periods than during the midday. As shown in Figure 37, the most heavily utilized trips operate between 1:00 pm and 4:00 pm.

Figure 35: Route 12 South Beech Street/Mall of New Hampshire

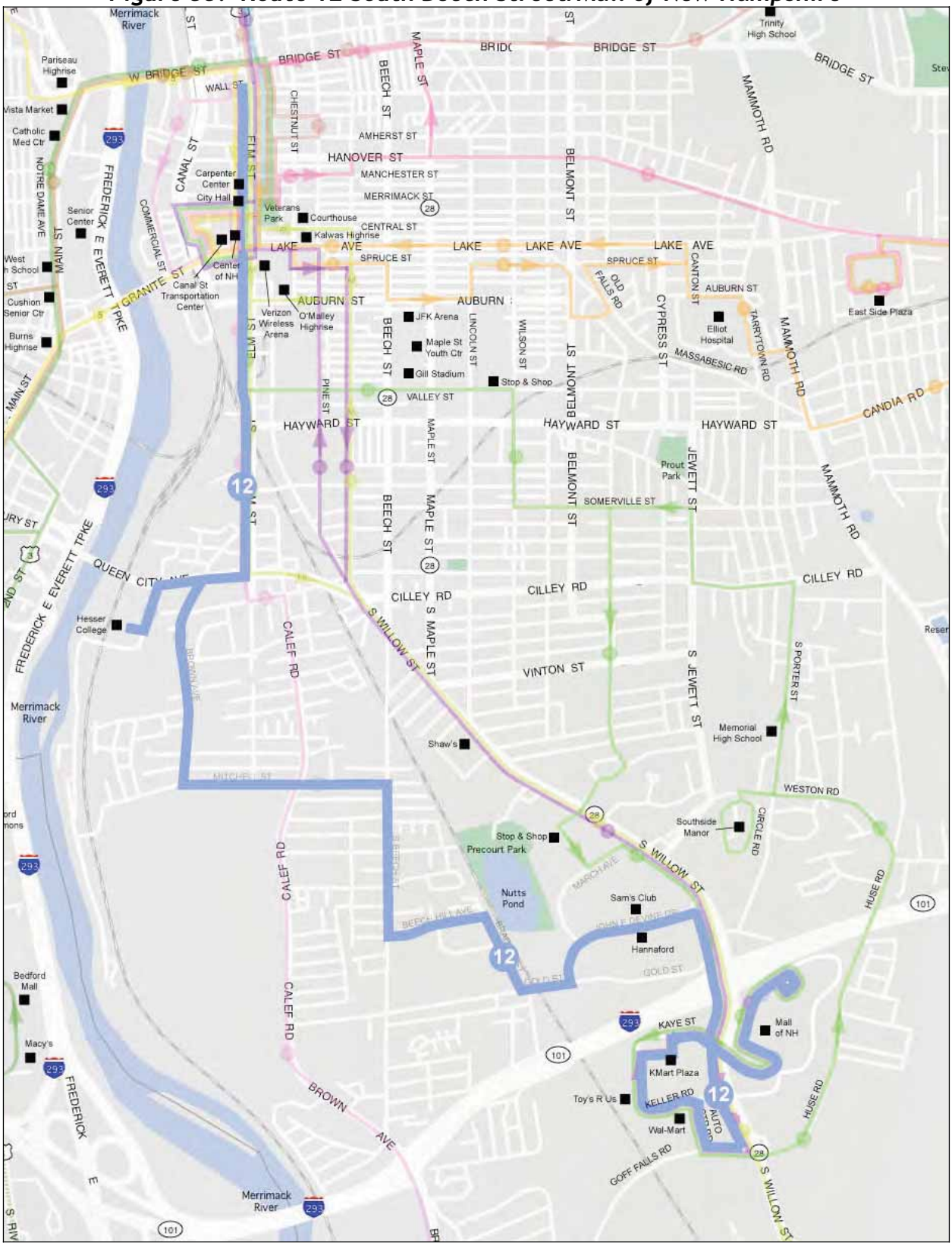


Figure 36: Route 12 Weekday Ridership by Segment

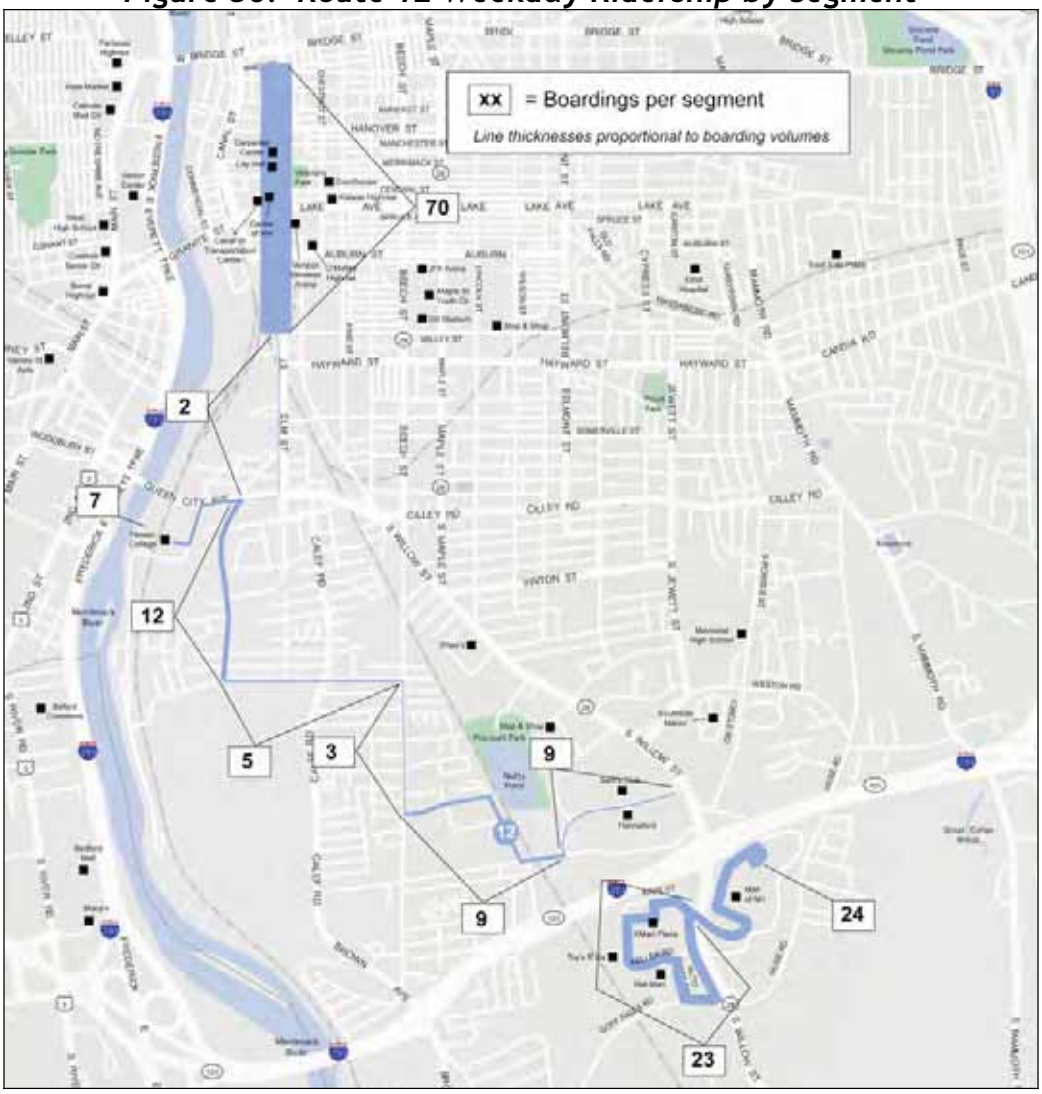
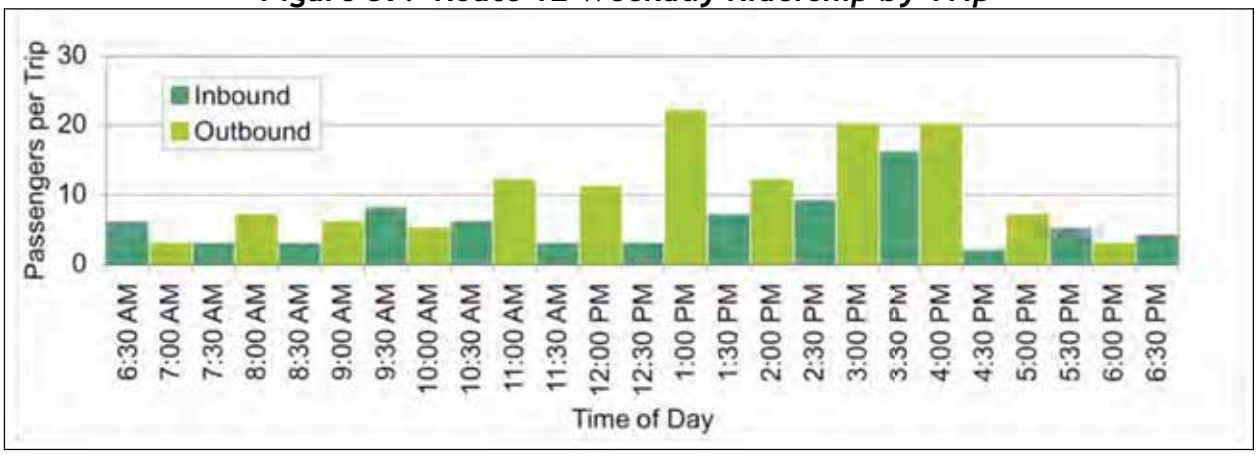


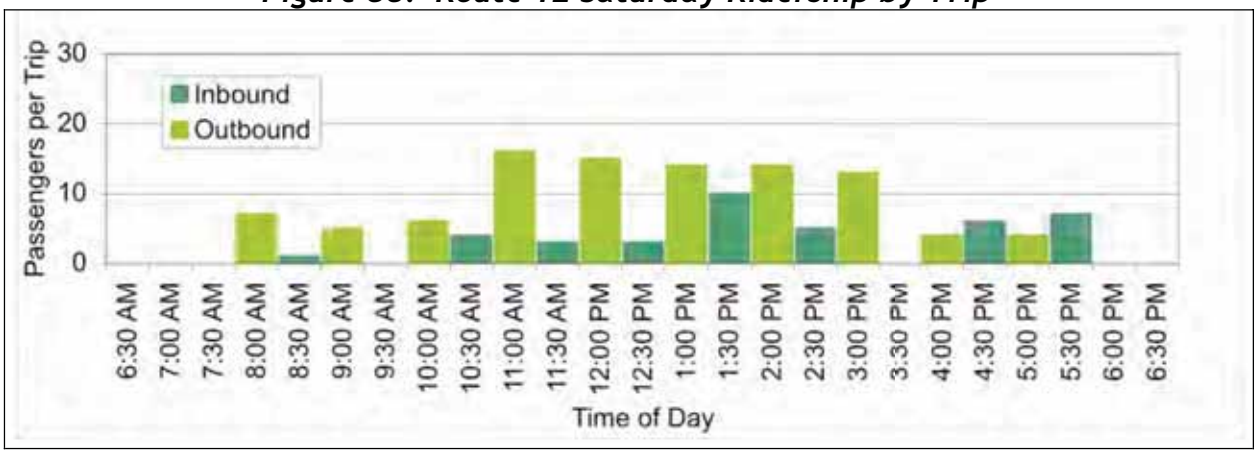
Figure 37: Route 12 Weekday Ridership by Trip



As with Route 8 South Willow Street, which also serves the Mall of NH, weekday outbound ridership significantly exceeds inbound ridership (for Route 12, 128 outbound trips and only 75 inbound trips. The imbalance is greatest in the afternoon, when relatively large volumes of passengers travel outbound on Route 12, but then apparently return by other means. Route 12 ridership does decline significantly after the 4:00 pm trip; still, later service could be an opportunity to build Route 12's market.

On Saturdays, ridership is low before 11:00 am (see Figure 38). Then, from 11:00 am until 3:00 pm, outbound ridership is fairly strong. After 3:00 pm, ridership tails off to low levels. As on weekdays, inbound ridership is relatively low, indicating that outbound riders may return via another means after service has ended.

Figure 38: Route 12 Saturday Ridership by Trip



Productivity

Route 12 performs well. On weekdays, all measures are significantly above average, and the route ranks in the top four in all measures (see Table 27). On Saturdays, productively is well above system average. Furthermore, Saturday productivity exceeds weekday productivity.

Overall Assessment and Potential Changes

Overall, Route 12 performs well. Still, potential changes could improve the route:

- While ridership at both ends is strong, intermediate ridership is light. In conjunction with changes to Route 3 Goffs Falls/Airport, which operates in the same area, some alignment modifications may be warranted.
- The operation of all inbound trips via Hesser College but only some outbound trips is confusing. The route could be simplified by operating all service via the college.
- Evening service should be considered.

Table 27: Route 12 Performance Measures

	System Avg	Route 12	Route 12 Rank
Weekdays			
Average Daily Ridership	147	**203**	**4 of 13**
Pax/Round Trip	12.2	**16.2**	**4 of 13**
Pax/VSH	14.7	**22.8**	**2 of 13**
Pax/VSM	1.1	**1.5**	**3 of 13**
Saturdays			
Average Daily Ridership	77	**151**	**3 of 10**
Pax/ Round Trip	11.0	**16.7**	**4 of 10**
Pax/VSH	12.6	**27.0**	**2 of 10**
Pax/VSM	1.0	**1.6**	**3 of 10**

Green = Above average/median; Red = below average/median

Route 13 Bedford Mall/CCT

Route 13 operates between downtown Manchester and the Bedford Mall largely via Route 3 (see Figure 39). Four different variations are operated:

1. AM Local: All morning trips (those before 12 noon) except the first round trip operate between downtown and the Bedford Mall. In the vicinity of Second Street and Boynton Street, outbound service operates directly along Second Street, while inbound service deviates to Boynton Street. In addition, outbound service deviates into Hannaford and Wal-Mart, and inbound service deviates to Bedford Commons.
2. PM Local: In the afternoon, service via Second and Boynton Streets is reversed: outbound trips operate along Boynton Street and inbound trips operate directly along Second Street. However, in the same manner as in the morning, outbound trips operate via Hannaford and Wal-Mart, and inbound trips deviate into Bedford Commons.
3. AM CCT Express: The first round trip in the morning is an express trip that operates beyond the Bedford Mall along Route 3 to Car Component Technologies (CCT). This variation operates outbound via Second Street in the same manner as the local trips. However, unlike the local trips, it does not make the deviation into Hannaford and Wal-Mart. Inbound, it travels via Boynton Street in the same manner as local trips, but does not operate through the Bedford Mall, nor does it make the deviation into Bedford Commons.
4. PM CCT Express: One afternoon CCT express trip operates in the same manner as the AM express trip, except that it operates in both directions via Second Street.

Route 13 operates Monday through Saturday. Weekday service operates from 6:25 am to 6:00 pm. Thirteen weekday trips are provided, and local service operates every 60 minutes at clock-face headways. The AM express trips departs Veterans Square at 6:25, which is 35 minutes before the first local trip, and the PM express trip departs from CCT at 3:05 pm, and operates between the 2:35 pm and 3:35 pm inbound trips. Nine round trips are provided on Saturdays, with service provided every 60 minutes from 8:00 am until 5:00 pm.

Figure 39: Route 13 Bedford Mall/CCT

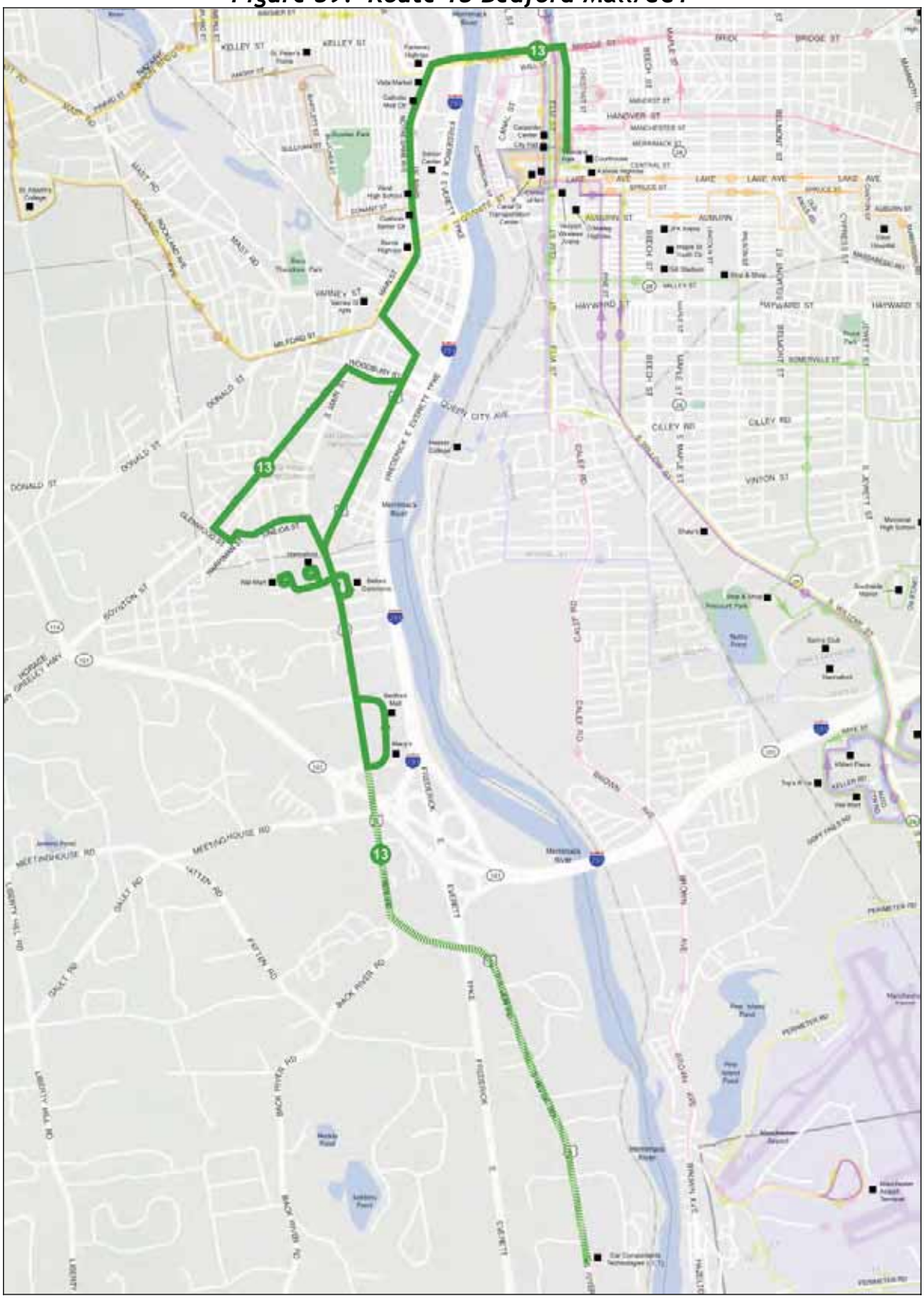


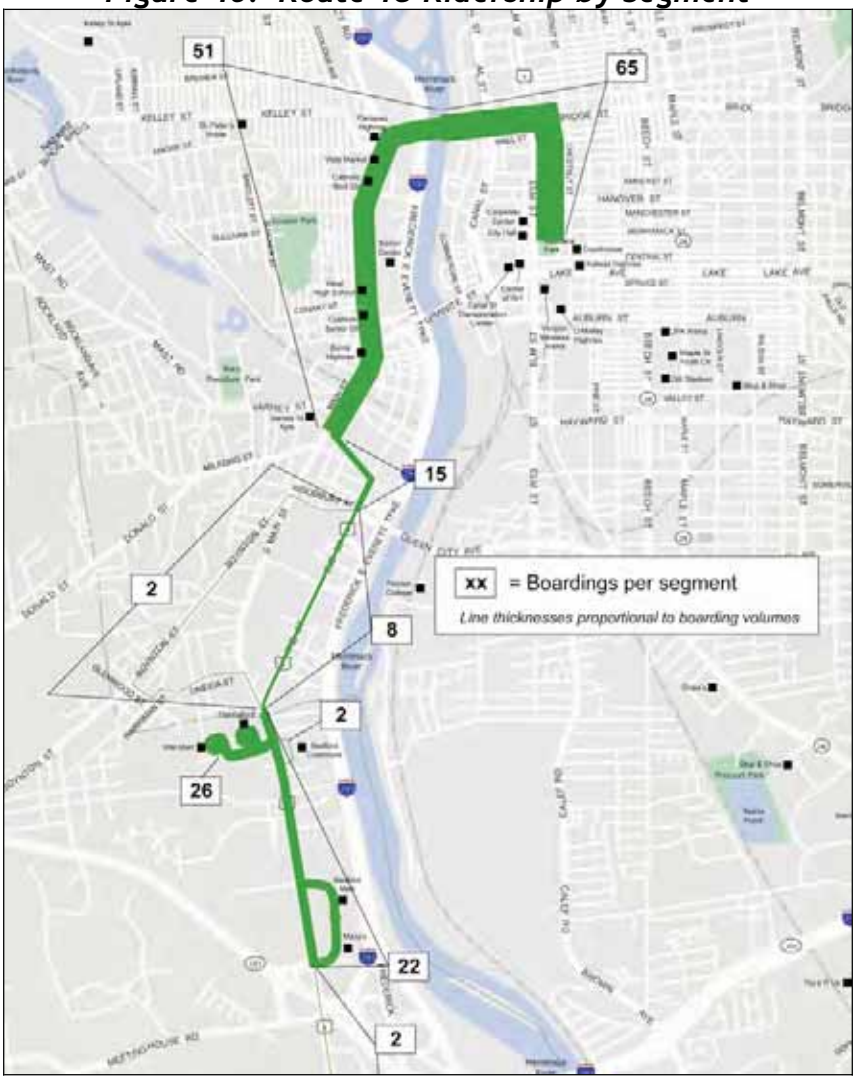
Table 28: Route 12 Service Statistics

	Weekdays	Saturdays
Span of Service	6:25am – 6:00pm	8:00am – 5:00pm
Round Trips	13	9
Headways (mins)	20 - 60	60

Ridership

Route 13 is the highest ridership route in the MTA system, and carries 250 passengers per day on weekdays, and 221 passengers on Saturdays. Ridership is heavily oriented to the northern and southern ends of the route (see Figure 40). Other heavily utilized stops include Hannaford and Wal-Mart on Colby Court, and Macy's and the Bedford Mall. Ridership to the deviation along Boynton Street and through Bedford Commons is very light (2 passengers trips along Boynton Street, and only 1 to and from Bedford Commons).

Figure 40: Route 13 Ridership by Segment



Weekday trips are made for a wide variety of trip purposes, but primarily for work and shopping (see Table 29).

Table 29: Route 13 Trip Purposes

Trip Purpose	% of Riders
Home-based-work	34%
Home-based-shopping	21%
Home-based-school	7%
Home-based-medical	7%
Home-based-personal	10%
Home-based-social/recreation	3%
Home-based-other	10%
Non-home-based	7%
Total	100%

However, although more trips are made for work purposes than for any other single purpose, peak period ridership is significantly lower than mid-day ridership (see Figure 41). Also, as with routes that serve the Mall of New Hampshire, outbound ridership is significantly higher than inbound ridership (152 outbound, 98 inbound), indicating that many riders who use Route 13 to get to shopping areas along Route 13 return using another mode. On Saturdays, the imbalance is even higher, at 144 outbound versus 77 inbound (see Figure 42).

Figure 41: Route 13 Weekday Ridership by Trip

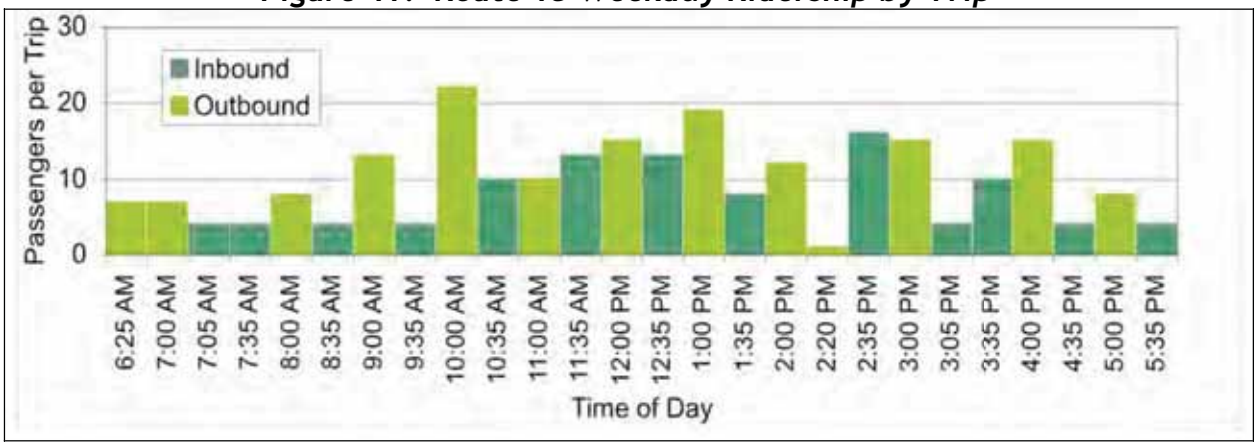
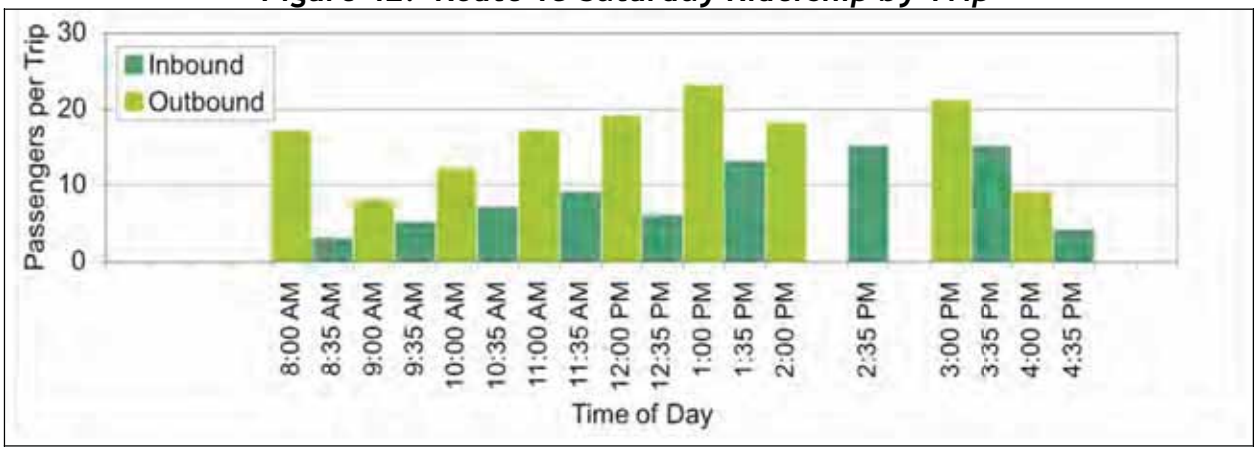


Figure 42: Route 13 Saturday Ridership by Trip



Productivity

Route is the highest ridership route in the MTA system. On weekdays, all measures are significantly above average, and the route ranks either second or third highest (see Table 30).

Table 30: Route 13 Performance Measures

	System Avg	Route 13	Route 13 Rank
Weekdays			
Average Daily Ridership	147	**250**	**1 of 13**
Pax/Round Trip	12.2	**20.0**	**2 of 13**
Pax/VSH	14.7	**24.6**	**3 of 13**
Pax/VSM	1.1	**2.0**	**2 of 13**
Saturdays			
Average Daily Ridership	77	**221**	**1 of 10**
Pax/ Round Trip	11.0	**24.6**	**2 of 10**
Pax/VSH	12.6	**24.6**	**3 of 10**
Pax/VSM	1.0	**2.4**	**2 of 10**

***Green** = Above average/median; **Red** = below average/median*

On Saturdays, productively is also well above system average, and Route 13 ranks second or third highest in the MTA system. Furthermore, Saturday productivity exceeds weekday productivity.

However, one particular weakness is the productivity of the CCT express trips. These trips are long, and carry very low ridership. Without these trips, Route 13 would rank highest in passengers per trip and passengers per vehicle service mile, and second highest in passengers per vehicle service hour.

Overall Assessment and Potential Changes

Route 13 performs well. It is MTA's highest ridership route, has strong ridership along most of its northern end, and serves many high ridership retail locations along its southern end. Still, there appears to be potential for improvement in a number of areas.

First, as is the case with many MTA routes, Route 13 is overly complex. There are four service variations, and deviations that are served in only one direction. Two of the deviations—Boynton Street and Bedford Commons—are very poorly utilized; service could be greatly simplified by eliminating these variations.

A third deviation—to Wal-Mart and Hannaford—attracts high ridership (36 trips per day), but is only served outbound. As a result, inbound riders must board an outbound bus and travel to the end of the route and then back in again. Ridership levels at this stop warrant service in both directions.

The express trips to CCT are very unproductive. The two round trips carry only two to four passengers per day—these resources could be better utilized elsewhere.

Finally, there are at least two potential ways to expand service. The first would be to extend service from the current terminus at Macy's/Bedford Mall to the Mall of NH. This extension would operate along I-293, and would improve connections between the west side of Manchester and retail areas at and around the Mall of NH. The second potential expansion would be to extend service south along Route 3 to the new Target in Bedford just south of I-293.